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THE EMORY UNIVERSITY QUARTERLY is published four times a year — in March, June, October, and December — by Emory University, Emory University, Georgia. The yearly subscription is one dollar and a half ($1.50), and single numbers are fifty cents. Communications should be addressed to The Editor, EMORY UNIVERSITY QUARTERLY, Emory University, Georgia.

Entered as second-class matter March 24, 1945, at the post office at Emory University, Georgia, under the Act of August 24, 1912.

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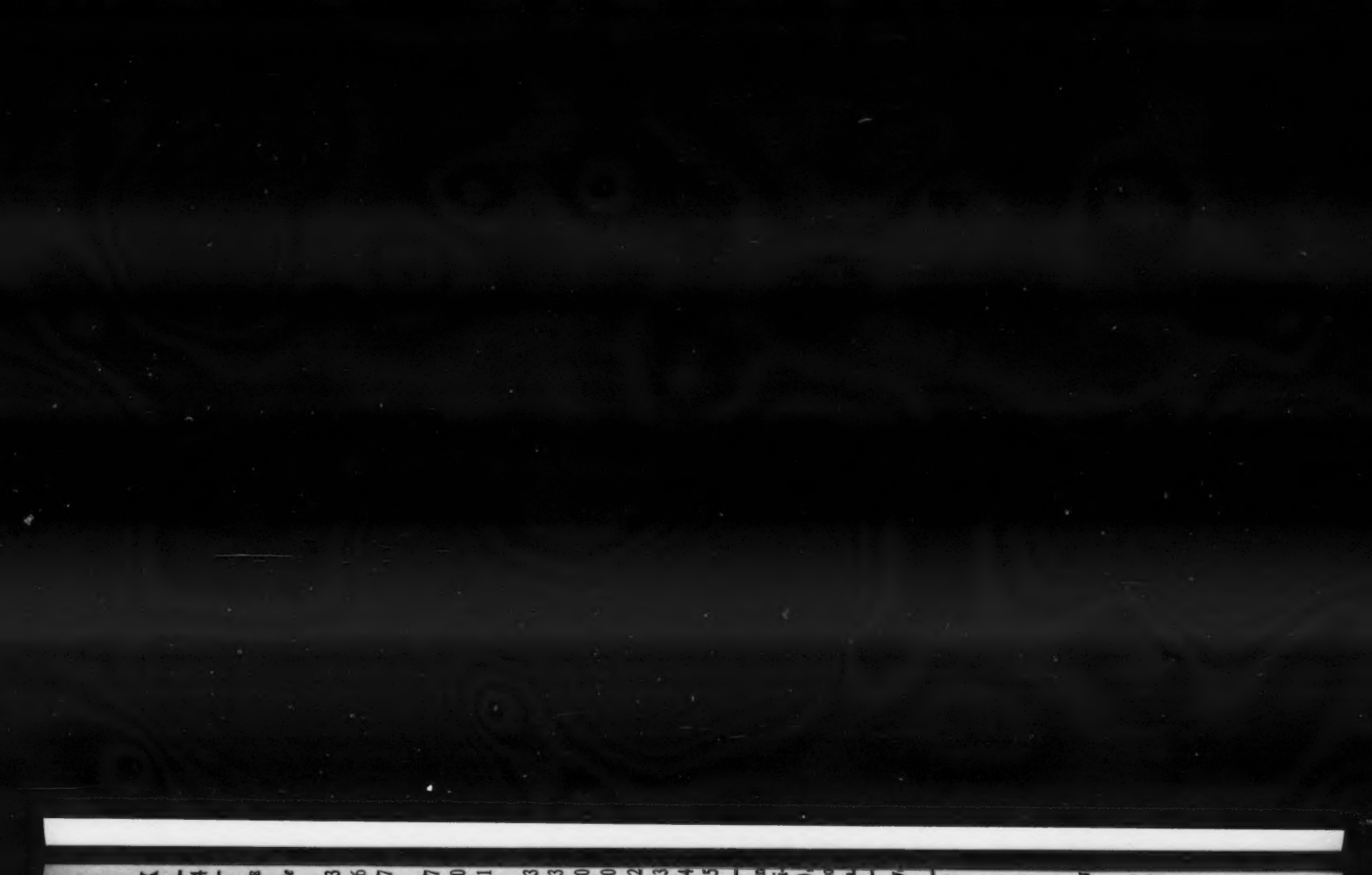

LETTIE PATE EVANS

THE
EMORY UNIVERSITY
QUARTERLY

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Christ the Hope of All Nations: A Christmas Meditation

By ARTHUR J. MOORE

Arthur J. Moore, Class of 1914, D.D. '34, LL.D. (Southwestern) '35, member of the Board of Trustees of Emory University, is the Presiding Bishop of the North and South Georgia Conferences of the Methodist Church. During the winter of 1949-50 he is making an extended journey through the Far East, in the course of which he will preside at six conferences of the Church.

IN THE LANDS of the far distant North when the long night of winter is nearing its close, many of the people dressed in holiday attire climb to the tops of their loftiest mountains and wait for the first glimpse of the returning sun. The moment it is seen, they embrace each other and exclaim, "Behold, the sun!" Jesus Christ is the Sun of Righteousness rising above our world of darkness. His birth is the highest, the deepest, and the holiest event in human history.

It has been a long time since those simple shepherds near Bethlehem beheld in the clear eastern sky the glory of the Lord and heard the voice of a heavenly messenger proclaiming, "Behold, I bring you good tidings of great joy!" Centuries have rolled by, but

the luster of that night has not passed away. The thrill of joy that shot through the hearts of those waiting men as they listened to that message of glad tidings is again in our hearts. From all parts of the world the grand chorus resounds, "Joy to the world, the Lord is come." All the creeds of Christendom, all the churches of Christ, and all the centuries of history unite to proclaim Him the hope of the world and the Saviour of men. In His coming we see God reconciling man to Himself. With infinite patience and cost and through a long and painful process, God is in Christ leading the world back to Himself.

The night Christ was born found the world in a sad plight. A large section of the human race was in slavery. Children were unwanted and womanhood unappreciated, but His coming inaugurated a new era in the affairs of mankind. He has become the central figure of all human history. His teaching has changed the world's thought concerning all the fundamental matters of life. The cradles of the world have been hallowed, babyhood has been made beautiful and divine. Life has been made radiant with meaning because we are His comrades. The cross, once the symbol of all that was ugly, has become the symbol of all that is dearest and holiest in Christian faith, and even death has been so changed that instead of being the end of life, it is for all who are linked to Christ the beginning of larger and fuller life.

What then is the duty of Christian people in these days of shattering change? It is to discover and appropriate those deathless things which cannot perish because they have their alliance with God. It would be a gesture of insincerity and artificiality to deny or ignore the tragic implications which the present situation holds for the world. We are in one of those testing moments of human history in which even the Church must defend its teaching and demonstrate its ability to lead a confused world back to sanity and friendship.

If we were living in a slow, monotonous world the cry of human need would undoubtedly be in our ears, but in these days of bewildering change and confusion we are under renewed obligation to prove that Christianity has an adequate remedy for the turmoil of

our world. Those of us who believe in the living God who has spoken to the world through His Son, Jesus, of an everlasting kingdom must look not at the angry inferno of the world's life, but at the golden spires of the city of God. We must insist that God has something to do with the world and means to do it. One of the great certainties of our faith is the sovereignty of God, and that means that out of this night of savagery and materialism there must come a new moral order.

Jesus never doubted the ultimate triumph of His gospel, and today He is out upon the broken, blasted roads of the world's life laying His healing hand upon the hurts of His children. He remains the great restless missionary who will not rest Himself nor let us rest if we look out upon the world with His eyes. He has illimitable resources at His command. Our fears are born of forgetfulness. To be sure, our tasks are formidable and our foes are many, but there is no room for whimpering or complaint. He still has the supreme unifying message for mankind.

The new year will bring to His disciples the privileges of sharing in new triumphs. Therefore, to follow Him is to face the future not only without despair, but with an undecaying hope. Let us stand about His person, acknowledging Him as the Son of God, believing that He alone is big enough and brave enough and divine enough to redeem our world, and then take our appointed way with Him in quietness, chastened indeed, but confident that we are not alone.

Ours is the age of transition. Every age forms a bridge between that which precedes and that which follows it, but to our age has been given the difficult task of bringing to bear the influence of religion upon a world filled with hopelessness and chaos. But we need not be discouraged. The gospel of salvation through Him is sufficient for the individual, the nation, and the race. It cannot be given up without darkening the hope of the world. To proclaim and defend it is a duty of which we must not complain and a service in which we must not grow weary.

Over the troubled waters of the world's life, Jesus again draws nigh. He is not ignorant of the peculiar ache and stress of our time. He is great enough to be the judge of our world and tender enough

to be the friend of little children. Thus we all may bring to Him at this holy season the anxieties that depress us, the problems that elude our wisdom, and the sins that outmaster us. He gathers into His heart every heaven-born instinct of our race, gives a new witness to the greatness of life, and a new thrust forward toward our finest aspirations.

The Lord of Light

By CHARLES R. HART

Let none to whom the God of Song is dear
Believe he rules in a contracting sphere;
Say not, Apollo, as he looks about,
Beholds new realms from which he is shut out.

There can be no constraint, nor dearth, nor blight
That long will set at naught the Lord of Light;
He has beheld too many storms abate
To fear a menace to his kingly state.

Fret not because few votaries appear;
The deepest truths are not for every ear.
Where numbers lessen, not where they increase,
Shall true success be found and joy and peace.

Is seems, imagination has a foe
That other generations did not know,
Science, but poetry is born of awe
In contemplation of eternal law.

Our stumbling block is rather how to keep
Our vision clear, as evermore we heap
New instruments of pleasure and of ease.
Poet, be master, not the slave, of these!

Progress in Cancer Research

By JOHN RODERICK HELLER

John Roderick Heller, B.S. (Clemson) '25, M.D. '29, is Director of the National Cancer Institute, Bethesda, Maryland.

IN THE STRUGGLE against cancer, there is perceptible progress, although not yet of a kind which can be compared with the great nineteenth-century landmarks in medicine. Since the establishment of cellular pathology by Virchow and others, and the basic work of Pasteur in bacteriology, one disease after another has been struck down in a pattern of triumph which is now familiar: first, the isolation of a specific microbe, bacterium, or virus; then the preparation of a counterspecific vaccine, drug, or other therapeutic agent. But to solve the riddle of malignancy is something else. Cancer research is a world in itself. The whole subject is full of paradoxes; in a sense, the more we discover, the more remains to be learned.

For example, although more causative agents have been identified for cancer than for any other disease, it is still true that the presumable cause of less than one per cent of all cancer is known. The victory when it finally comes, will be a turning point in science comparable to those which came with the nineteenth-century discoveries; and it will not be a triumph for medicine alone, but for all the sciences that contribute to it.

Private and public organizations are united in the nation's coöperative attack on the problem. The layman's chief source of information about the disease is his State Cancer Society. These societies are joined in the American Cancer Society, established in 1913 under the name of the American Society for the Control of Cancer.

The American Cancer Society was a prime mover in securing the foundation of the National Cancer Institute by Act of Congress in 1937. The Institute, located at Bethesda, Maryland, is part of the National Institute of Health of the United States Public Health Service. Administratively, it is part of the Federal Security Agency.

The public and private cancer agencies, I am glad to say, now work as a team. Action is taken by one with the full knowledge of the others, and often after joint consultation. Hundreds of universities, hospitals, and laboratories, and thousands of individual physicians and scientists form a coöperative network almost without parallel. Freedom of action and independence of thought are the most valuable scientific tools we have, and they have recently given us many promising discoveries.

For example, nuclear physics has now been largely removed from the secrecy of its wartime project, and is showing potentialities for great contributions to our knowledge of cancer as well as of other medical problems. As a by-product of atomic energy development, radioactive isotopes are available in sufficient quantities to make possible an intensive study of the differences between the metabolism of the normal and the cancer cell. Isotopes are atomic particles possessing certain distinctive characteristics which make it possible to follow their course through living tissue—to use them as "tracers."

Another tool just beginning to yield fruitful results is the electron microscope, with which magnification is obtained approximately one hundred times greater than with the ordinary instrument. Unfortunately, techniques for the use of the electron microscope on living tissue have not yet been perfected. Another new invention, the phase microscope, enables us to see clearly the minute components of living cells without staining the tissues. Still another remarkable advance in basic research is the fractionization of cells, by means of the ultracentrifuge. This device, a metal rotor resembling a cream separator which spins at high speed in a vacuum chamber, allows us to separate parts of the cell for discrete study. It helps to grasp the scope of expanding vision if we remember that the cell, the basic unit of all living organisms, is measured in microns, that a micron is 1/1000 of a millimeter, or approximately 1/25000 of an inch. Human red blood cells average 7.5 microns in diameter.

What is being seen with the aid of these new tools? All the thousands of cancer research projects, large and small, publicly or privately paid, fall into the categories of *basic* or *clinical* research. Each has its subdivisions:

BASIC RESEARCH					CLINICAL RESEARCH		
Carcinogenesis			Tumor Development		Diagnosis	Therapy	Epidemiology
Internal Stimuli	External Stimuli	Mechanism	Tissue Synthesis	Tumor-Host Relationship			

The first concern of basic research is naturally the origin of cancer, or carcinogenesis. Under the sub-heading "internal stimuli," are included studies of agents to be found within the body of the host. There are several of these, each having a wide measure of supporting evidence.

Is cancer inherited? There is no positive answer. Virtually all members of specially inbred strains of mice at the National Cancer Institute and other laboratories develop tumors. But human beings are not inbred, and the most that can be said is that while heredity is a factor, there is no evidence that it alone is decisive.

Is cancer caused by a virus? The presence of a virus-like agent in certain kinds of cancer among animals has been progressively proved for many years, perhaps beginning in 1910, when a chicken breeder, carrying a Plymouth Rock hen which appeared to have cancer, sought out Peyton Rous at the Rockefeller Institute. Dr. Rous examined the chicken and discovered a sarcoma, or cancer of connective tissue, which was transplantable to other chickens, but was apparently caused by some agent much smaller than an animal cell. Like most others in cancer research, this conclusion was reached through a process of elimination. After an emulsion of the disrupted sarcoma cells in salt solution had been passed through a filter so fine that passage of neither cells nor microbes was possible, it was injected into other fowl, and produced the same sarcoma; apparently a "filterable virus" was responsible. Further support for the virus theory has since come from many experiments with other animals.

In 1936, at Bar Harbor, Maine, Dr. John J. Bittner demonstrated that mice of a strain in which breast cancer is ordinarily frequent, developed few tumors if suckled by mothers of a "low-tumor strain." It appeared that a factor of importance for the

development of the malignancy must be transmitted by the milk. Dozens of divergent experiments on various aspects of the "milk factor" have since been started. The "mouse dairy," maintained at Columbia University for this purpose, has become famous. Investigators in various parts of the country, aided by grants from the National Cancer Institute, are exploring the possible relations between genetic patterns and the milk virus in animals and humans with cancer of the breast. But so far there is no experimental evidence to support the existence of a "milk agent" or any other virus in human cancer. (Furthermore, among animals, nothing approaching a general "cancer virus" has been found, only the suspected presence of virus-like agents which in some animals, under some circumstances, will produce certain types of cancer.)

Cancer research is something like the exploration of a seemingly endless cave; new search parties branch off while old avenues of approach are still being investigated, and all must keep in touch with each other. Currently, many workers are investigating the relationship of enzyme activity to cancer. Enzymes are substances present in very minute quantities in all living material, the catalysts of metabolism within the cells and tissue. A familiar example is the action of the enzymes in yeast, in which sugar is split to produce carbon dioxide for the raising of bread. Every type of living tissue is equipped with a characteristic pattern of enzymes. In normal tissues, these patterns vary markedly from one tissue to another; but in tumors, as Dr. Jesse Greenstein of the National Cancer Institute has shown, the enzyme patterns tend to be nearly uniform, resembling those of the normal embryo.

Likewise, the suspected relationship between changes in the secretions of the ductless glands—the hormones—and the occurrence of cancer has been receiving a great deal of study. By administering sex hormones, cancer in mice can be caused, controlled, or prevented; and some scientists believe that a complete understanding of the operation of the hormones will finally give the key to cancer. This view is not universally shared, but there is general agreement that, in human beings as well as animals, some tumors are associated with

hormonal imbalance, and that derangement of endocrine relations within the body may result in cancer.

Meanwhile, the investigation of *external* stimuli in carcinogenesis goes forward on a wide front. This is one of the oldest phases of cancer research. In the eighteenth century, for example, it was first noted that London chimney sweeps frequently fell victim to cancer caused by soot. Some three hundred or more carcinogenic agents, ranging from certain oils and tars to x-ray, have since been identified. None of these can be called "the" cause of cancer, for the vast majority of human cancers cannot be traced to an external cause. Yet this work has long since proved its usefulness, not only in prevention of illness but in basic research, for it has made possible the systematic production of cancers in laboratory animals. Investigators are studying the action of external stimuli in relation to such internal stimuli as hormones, enzymes, the genes, the viruses, and others. In animals, diet has been shown to exert pronounced effects on carcinogenesis and tumor development, a discovery of value chiefly as a lead to further avenues of search, for, as yet, there are no accepted parallels in human cancer.

Increasingly in recent years the search for a common denominator has led to an intensified study of the cell itself. For the cancer cell is not simply a normal cell which has been attacked by the agent of a disease. It is a cell which has become autonomous—a special kind of cell which has gone wild. Unless destroyed by radiotherapy, or cut out by surgery, it multiplies in an uncontrolled manner until it brings death to its host, either by interfering with bodily functions or by a toxic effect. Cancer is growth itself run amuck. What is its mechanism? We should know more about it if we better understood normal growth.

To the new research tools of the electron and phase microscopes, the fractionization of cells and other new techniques, science is looking hopefully. At the National Cancer Institute, Drs. Wilton Earle and Katherine Sanford have succeeded in growing an isolated cancer cell in a fine glass tube. They have managed to get this isolated cell to reproduce itself and produce tissue. Furthermore, by means of a special technique they have succeeded in growing larger cultures of

cancer cells than ever before, under a sheet of perforated cellophane. This affords a great advantage. Previously tissue had been grown in blood plasma, upon which it fed; without the plasma clot, the scientist is now able to control the nutrition of cancer cells, to see what they feed upon and why, and how their nutritive process differs from that of normal cells.

There are many sides to the study of the carcinogenic mechanism. One hypothesis is that cancer may result from a mutation of the body cells. In genetics, mutation is the process of "permanent transmissable change" which produces a "sport." It has long been known that cell mutations can be caused by x-ray and ultraviolet light; several investigators, with the aid of National Cancer Institute grants are now experimenting further in the production of cell mutations by ultraviolet light and by chemical carcinogens and other chemicals. This example is only one of scores which might be cited, each apparently remote from clinical medicine, yet none without its possibilities of bringing in a sudden flood of light. The betting may be heavy on favorites, but there is always the chance that a long shot will come in.

Besides the study of carcinogenesis in all its phases, basic research studies the growth of the tumor itself, investigating the process of tissue development, both normal and abnormal. The cancer cell, instead of reproducing the kind of normal tissue from which it is derived, produces other cancer cells to form tissue which ultimately, if unattended, displaces or destroys normal tissue. The normal cell appears to be controlled through some sort of "organizer" which enables it to reproduce itself and fill its predestined function. In this connection, an interesting experiment was performed by Dr. H. W. Chalkley of NCI on the hydra, a tiny aquatic animal. If a cubic millimeter of hydra tissue is minced and poured into a mold, it fuses into a single mass. Chalkley found that in five or six days the minced tissues would reorganize themselves so that on an average four hydras appeared. The number of hydras that came out of the mold had nothing to do with the number or size of those that went into it as minced tissue. His present experiments concern the

effect of methylcholanthrene, a carcinogenic agent, upon this extraordinary organizing ability of the hydra cells.

In many laboratories across the country experiments in tissue culture are under way with the aid of stable or radioactive isotopes, perhaps the most important of the new research tools. For example, a plant can be fed phosphorus, in the form of phosphates, incorporating radioactive isotopes. The plant will perform the synthesis into protein, which can then be ingested by a laboratory animal; and the original radioactive isotopes will enable the investigator to follow the further metabolism which takes place within the animal organism. The tracer isotopes may help to explain just how the various substances which are known to enter the metabolic processes of normal and abnormal cells alike are utilized by the cancer cell in the formation of tumors.

The cancer cell has a life of its own, the tumor has a life of its own; beyond that comes the relationship of tumor to its host, and here basic research begins to approach clinical medicine. But with laboratory animals, it is possible to undertake many studies impossible with human patients—to place windows in mice, for example, so that the tumor's growth in the host can be fully observed.

Crossing the line into clinical research, which is concerned with human patients, the first problem encountered is diagnosis. By far the most reliable test so far available is that of tissue examination, but the search constantly goes on for ways of recognizing cancer at an earlier stage, and more accurately. The work with enzymes has been fruitful. Blood tests have been reported. The National Cancer Institute is now compiling all the cancer tests so far reported, and re-evaluating many of them, in coöperation with three state universities. Tests found especially promising at these centers are forwarded to the Public Health Service clinic at Hot Springs, Arkansas. This is primarily a clinic for the detection and treatment of venereal disease. For the past year and a half, however, visitors have also been screened for cancer—using a variety of diagnostic tests—with the result that cancer has been found in about two per cent of the visitors, and the process of "testing the tests" has been greatly advanced.

After diagnosis comes therapy; the only two cures for cancer yet known are surgery and radiotherapy in its various forms. Research is constantly widening the scope of each. Lung cancer, to name one example, within the last few years has become operable in its earlier stages with a fair hope of success; and in radiotherapy, the use of higher voltage radiation and radioactive isotopes for treatment as well as research is being rapidly explored.

Basic research has already borne fruit in other treatments which have secured significant remissions of the disease in some of its most baffling forms. Since 1941, Dr. C. B. Huggins at the University of Chicago has gained prolonged remissions of prostatic cancer in some patients by control of the male sex hormone, either by administering female hormones or by castration.

From other experiments with the microörganisms and the study of cell mechanism, a rational therapeutic principle has emerged—the principle of *metabolic antagonism*. A metabolite is any one of the substances, such as enzymes, hormones, or the nutritional elements of the cell, which are involved in its growth and maintenance. An "antagonist" is a substance differing from, yet so nearly like the metabolite in chemical structure, as to be specifically capable of interfering with the synthesis, utilization, or function of a particular metabolite. The antagonist fools nature, so to speak, being nearly akin to the metabolite that it is taken up into the cancer cell mechanism, where, by its difference, it interferes with the metabolic process.

This careful definition is necessary to make clear that the metabolite antagonist is not, unfortunately, a relatively simple "antagonist to cancer," such as the "antibodies" which assist in the treatment of some other diseases. Yet some results have been obtained.

In acute leukemia, a cancer-like condition of the blood characterized by an abnormally high number of white blood cells, Dr. Sidney Farber, of Children's Hospital in Boston, has produced temporary remissions of the disease in a few children by using various antagonists to folic acid. Folic acid is a B-complex vitamin, and a metabolite in the production of white blood cells.

During the late war it was found that nitrogen mustards, closely related to mustard gas, produced nuclear damage to cells; and

subsequent investigations found that proliferating cells were most vulnerable. Nitrogen mustards have since won a place for the remissions they have produced in the treatment of Hodgkin's Disease, lymphosarcoma (and some other types). But these—like most other chemicals used against cancer—are highly toxic. The basic problem remains the same: how to retard or halt the proliferation of cancer cells without undue damage to normal tissue? Upward of 1,000 chemical compounds have been tested at the National Cancer Institute, under the direction of Dr. Murray Shear, in an effort to solve this problem. Fifteen mice are used in the first testing of each agent; larger animals are then used to test the more promising compounds and their modifications. Before being used on human patients, they will also be tested on normal and cancer tissue grown under cellophane.

At Sloan-Kettering Institute in New York, it was recently reported, upwards of 1,500 chemical compounds have been given laboratory tests, and additional thousands have been tried at many places here and abroad. Reports of experiments throughout the world with some 5,000 chemotherapeutic agents against cancer have been published, from the eighteenth century to the present time, and the search continues with increasing vigor.

Several of the compounds tested at the National Cancer Institute, and no doubt some of those being investigated elsewhere, are now approaching the point of clinical use. It is highly doubtful that any will prove a blanket cure, but it is quite likely that some will produce at least temporary remissions of certain forms of cancer.

After research in diagnosis and therapy, comes the study of epidemiology—the incidence of the disease and the known circumstances surrounding the individual case. Although it is not a communicable disease, it would be highly desirable if cancer were effectively reported in all states, as it now is in some. But even with the spotty statistics and case histories now available, much is being done. Studies are under way to determine what characteristics, constitutional and environmental, cancer patients have in common, and, similarly, what characteristics are shared by cancer-free patients. Industrial occupation and climate may enter into it; it is well known,

for example, that excessive sun exposure may lead to skin cancer. In some industries, steps have been taken to protect workers against certain carcinogenic compounds. The tragic story of radium poisoning in the watch industry has often been told. There is a potential danger in the indiscriminate use of x-ray machines in shoe stores. The complex, and fascinating, study of environmental cancer is receiving an increasing amount of attention.

As known carcinogenic agents are discovered, steps are taken to bring their harmful action under control; and at this point we leave the subject of research and enter the field of "cancer control"—another world in itself. By law, the National Cancer Institute is also concerned with control activities, making grants to assist state health departments, to provide for intensified, coördinated teaching of cancer in medical and dental schools, for the special training of practicing physicians in cancer hospitals, and for many other purposes. The whole approach to the cancer problem requires not only teamwork among private and public interests, but the most delicate timing. It is useless to build new clinical centers, for example, until trained staffs are available, or to make research funds available far beyond the needs of the number of qualified specialists.

Despite the complexity of our subject, the general objective of cancer research at the present time can be summed up in one word, integration. On the one hand, the investigator is in closer contact than ever before with the basic sciences. On the other, it is desirable for him to work as closely as possible with clinical medicine. This powerful trend is symbolized in the opening of new clinical centers such as the Goldblatt Memorial, which is situated on the campus of the University of Chicago, with all its scientific resources, and divides its own floor space between laboratories and beds.

Cancer research is an exquisitely organized effort in which nearly all countries and scientific disciplines coöperate, and in which the results of integrated effort are already beginning to show. It is too soon to anticipate the day of ultimate success, but not too early to predict that the very form and structure of this coöperative endeavor will itself prove a beneficial example to mankind.

The Movement to Humanize the Institution of Slavery During the Confederacy

By BELL IRVIN WILEY

Bell Irvin Wiley, A.B. (Asbury College) '28, M.A. (Kentucky) '29, Ph.D. (Yale) '33, is Professor of History. Best known for THE LIFE OF JOHNNY REB: COMMON SOLDIER OF THE CONFEDERACY *(Indianapolis, Bobbs-Merrill, 1943), he is now at work on a parallel study to be entitled* THE LIFE OF BILLY YANK: COMMON SOLDIER OF THE UNION ARMY.

THE ESTABLISHMENT of the Southern Confederacy early in 1861 was hailed by slaveholders throughout the South as a great boon to their "peculiar institution." No longer would slavery be exposed to the abusive knocks of Yankee statesmen and to the malicious machinations of Northern abolitionists; but basking in the light of a warming Southern sun, hedged about by a circle of admiring friends, it would recover from the accumulated bruises of eight decades of unhappy association with cruel and misunderstanding partners, and attain a strength hitherto unknown. Slaveholders were reassured by portions of the Confederate Constitution which dealt with slavery. Instead of awkwardly side-stepping terms as the framers of the Federal Constitution had done, the fathers of the organic law of the Confederacy had used the word "slave" boldly and with notable repetition. The Confederate Constitution also made specific guarantees of the protection of slave property within the states and in any territories that might be acquired. "Little Aleck" Stephens struck a popular note in his speech at Savannah a short time after the adoption of the Confederate Constitution when he referred proudly to slavery as the "chief stone of the corner" of the new government.

Despite fundamental guarantees and expansive utterances of optimists, slavery was destined to an unhapy and precarious existence in the Confederacy. The echoes of Stephens's "cornerstone"

bombast had hardly subsided when a movement was launched to make important changes in the laws governing slavery. These proposed changes were intended to purge slavery of patent abuses, to humanize the institution, and to bring it up to "Bible standards." The movement to reform the institution of slavery had its origin in religious circles, and received its greatest impetus from the church. But ere the close of the war, it attracted a wide following among the laity.

The idea of humanizing the slave code was not altogether new at the outbreak of the war. At various previous times proposals had been made to repeal state laws prohibiting the education of Negroes. In 1855 a memorial was circulated in North Carolina requesting the legislature to enact measures sanctioning the marriage of slaves, protecting child-parent relationships, and repealing the statutes prohibiting the instruction of Negroes. But these and other similar movements made comparatively little headway, the chief obstacle being the fear that Northern abolitionists would use admission of abuses in slavery to the detriment of the institution.

The severance of the political relationships with the enemies of slavery and the establishment of a government pledged to its protection gave rise to a renewal of the agitation for reform. The feeling was widespread in the Confederacy that the South need no longer adhere to a strictly defensive policy in matters pertaining to slavery, but rather should admit certain salient evils, seek to discover others, and openly devote herself to the correction of all.

The evil which the reformers first attacked was the failure of the codes of the various states to recognize and sanction slave marriages. Agitation for the correction of this defect in the laws seems to have been initiated by the *Church Intelligencer,* a periodical of the Episcopalians. In a series of articles published in the summer and fall of 1861, the editors sought to arouse sentiment in favor of giving legal sanction to slave marriages. Early in 1862 another Episcopal journal, the *Southern Churchman,* entered the lists of reformers by publishing and endorsing the letter of a minister urging the speedy enactment of state laws to prevent the separation of married slaves. Sentiment favoring legal recognition of slave mar-

riages seems to have spread rapidly in 1862. An English clergyman who travelled in the South in the summer of that year was greatly impressed by the prevalence of reform views in the localities that he visited.[1] When the Reverend Stephen Elliott, Bishop of Georgia, addressed the General Council of the Episcopal Church of the Confederate States in November 1862, he expressed great satisfaction at being able to say "that the public sentiment is rapidly becoming sound" upon the subject of recognizing slave marriages, and that "the legislatures of several of the Confederate states have already taken steps toward this consummation."[2]

While sentiment on the slave marriage proposition was crystallizing and growing, reformers began an attack on a second evil, the legal proscription of teaching slaves to read. The movement to remedy this situation was launched by Baptist churchmen. In the spring of 1862 the Cherokee Baptist Convention of Georgia passed resolutions urging their fellow-churchmen to memorialize the legislature to repeal the law interdicting the teaching of the colored population to read. The Central Baptist Convention of Georgia at its meeting in the fall of 1862 went on record as concurring in the action of the Cherokee Convention in so far as the law forbade "owners from teaching their negroes to read the word of God." A member of the Central Convention declared that the only statute comparable in iniquity to the prohibitory law was "that of Parliament in the time of Henry VIII forbidding the yeomanry to read the word of God." The Georgia law, he denounced as "a disgrace to our civilization and to our country, and to the age in which we live." The agitation to repeal the state law against teaching Negroes to read was taken up by the Georgia Baptist periodicals. Within a few months church organizations of other states began to take action on the subject. The Alabama Baptist Convention of 1863, through its committee on Religious Instruction of Slaves, went on record as favoring a more adequate moral and spiritual culture of Negroes. The Committee on Religious Instruction of Slaves of the important

[1]W. W. Malet, *An Errand to the South in the Summer of 1862* (London, 1863), 58, 134, 156.

[2]Thomas M. Hanckel, ed., *Sermons by the Rt. Reverend Stephen Elliott, D.D. Late Bishop of Georgia* (New York, 1867), 576.

Appomatox Baptist Association of Virginia proposed a resolution urging the legislature of Virginia not only to repeal the law forbidding the teaching of slaves to read, but also to modify the statutes so that slaves might meet together for the purpose of singing, praying, and exhorting one another.[3]

Advocacy of another change in connection with Negro worship met with greater success; this was the proposal to repeal the Georgia law preventing the licensing of slaves to preach or exhort. Governor Brown in his message of March 25, 1863, to the Georgia legislature recommended the repeal of this statute, on the grounds that colored exhorters might accomplish much good and that the law was an unwarranted impingement by the state on religious liberty.[4] The legislature complied with the governor's request, by the enactment of a law in April 1863, permitting the licensing of colored preachers by local justices of the peace on recommendation of three white ministers.

Early advocates of the liberalization of the slave code during the Confederacy supported their position with an impressive array of arguments. A favorite contention was that the dictates of justice and humanity required an abatement of the harshness of the laws governing slavery. A second argument was that the South's severance of abolitionist connections left no excuse for the failure to correct recognized evils in the slave system. A third contention held that humanizing the slave code would promote the cultural and intellectual uplift of the Negroes. The Committee on Religious Instruction of Slaves of the Appomatox Baptist Convention attributed to ignorance the proneness of the blacks to superstition and their frequent reference in worship "to dreams and visions and aerial voyages." This committee expressed the conviction "that the only remedy is to cultivate their intellects." To this end it recommended the repeal of Virginia's law forbidding the teaching of slaves to read. A fourth argument advanced by the reformers was that the war was a punishment sent by the Almighty as a scourge

[3] *Southwestern Baptist,* September 18, 1862; *Minutes of the Alabama Baptist State Convention* for 1863 (Montgomery, 1864); *Minutes of the Appomatox Baptist Association* for 1863 and for 1864 (Petersburg, 1864), 16, 10.

[4] *Southern Recorder,* March 31, 1863.

on the South for her failure to administer the institution of slavery in conformity with the teachings of the Bible. The inference was that God would not permit the Confederacy to live and thrive until provision was made for the sanctity of slave marriages and the improvement of the Negroes' cultural and intellectual status."[5]

While most of the churchmen commenting on the question of reform in the early stages of the movement seem to have favored immediate adoption of the proposed remedies, a few advised caution and delay. A member of the Central Baptist Convention of Georgia thought that measures to reform slavery should be postponed at least until "we knew that we had slaves." Bishop Elliott was among those who thought it advisable to wait until Southern independence was assured before launching the reform program. Other persons objected to sweeping denunciations of existing slave laws as reflecting discreditably and unfairly upon the legislators responsible for the statutes. Still others were of the opinion that some of the remedies proposed by the reformers, especially the passage of laws recognizing marriages, would not correct the evils of which the would-be-revisionists complained.[6]

The years 1863 and 1864 were marked by a rapid growth of the reform sentiment and an expansion of the reform program. The progress of the reform movement during this period is attributable largely to the work of two Presbyterians, the Reverend James A. Lyon and Calvin H. Wiley.

James A. Lyon was a native of East Tennessee. But at the time of the outbreak of the war he had been for a long time a resident of Mississippi. For several years he had been pastor of the First Presbyterian Church at Columbus. He was well-educated, widely-travelled, well-read, and very bold in proclaiming his views. He opposed secession, stated that the war was the work of Southern demagogues, criticized the Davis administration, and in 1864 advo-

[5]*Southern Churchman,* January 31, 1862; *Southwestern Baptist,* September 18, 1862; *Southern Recorder,* November 4, 1862; *Minutes of the Alabama Baptist State Convention* for 1863; *Minutes of the Appomatox Baptist Association* for 1863 (Petersburg, 1864), 16.

[6]Stephen Elliott to C. C. Clay, Jr., January 15, 1863, MS. among Clay Papers, Duke University; *Southwestern Baptist,* September 18, 1862; *Southern Presbyterian Review,* XVI (1863), 145-160.

cated a plan of reconstruction with the North. Despite the unpopularity of some of his political beliefs, he held the esteem of his parishioners and ministerial associates throughout the war; in 1863 he was made Moderator of the Southern Presbyterian General Assembly. Five years after the close of the war, at the age of fifty-six, he was unanimously elected to the chair of Metaphysics, Logic, and Political Science at the University of Mississippi.[7]

In 1863 Lyon, as chairman of a committee appointed two years before to prepare a pastoral letter on the religious instruction of the colored people, made a report to the General Assembly of the Southern Presbyterian Church at Columbia, South Carolina. In this lengthy document published under the title "Slavery and the Duties Growing out of the Relation," Lyon delved deeply into the subject of humanizing or reforming the institution. He found no fault with slavery *per se* but deemed it beneficial to both the Negro and the white. He was firmly convinced, however, that "there are evils and abuses connected with slavery . . . which must be reformed before African slavery amongst us will come up to the Bible standard." These evils were "known, to all, acknowledged by all, and regretted by all good men who have the good of the institution at heart." Until recently, he continued, the embarrassing connection with Northern fanatics, made it difficult to admit abuses in connection with slavery. But, "God in his adorable providence has freed us from this embarrassment; so that *now* there is neither excuse for not proclaiming, nor pretence for not hearing the truth in relation to this great subject."

One of the evils cited for correction by Lyon was the proscription of slave education. Legislation prohibiting teaching slaves to read and write should be repealed, first, because the law of God required that the slaves should not be depressed but cultivated; second, because education would enhance the value of the slaves; third, because instruction would make the slaves more contented with their servile condition, provided they were treated correctly;

[7]Journal of the Reverend James A. Lyon. This manuscript, containing 250 pages covering the years 1861-1870 is in possession of Robert H. White, Nashville.

and fourth, because enlightened slaves were less likely to resort to crime or to engage in insurrection.

A second evil of which Lyon complained was absenteeism of owners from their plantations. This practice he referred to as a great and growing wrong. "In proportion as slaves increase in numbers and lands wear out in the older states," he said, "there is a tendency on the part of masters to send their slaves to new and more fertile regions, thus leaving them under the absolute and exclusive control of overseers whose greatest recommendation, in many instances consists in making large returns of the proceeds of slave labor." This was wrong and incompatible with "the dictates of an enlightened humanity." The owner of slaves ought to live near them "so that he can frequently visit and mingle with them, hear their complaints . . . sympathize with their afflictions and comfort them in their distresses; thus being a father to them, whilst they will be to him as children."

Want of sufficient legal protection to the persons and lives of slaves was a third defect attacked by Lyon. Because of the failure of the law to accept slave testimony against a white man, "a jealous overseer, a low malicious white man, or a drunken, infuriated master, may take the life of a slave without any just cause, and that too in the presence of any number of other slaves." This he said was "an outrage against both the laws of God and the instincts of humanity, and cried to heaven for correction." He did not advocate that slave testimony be received as direct evidence, but in murder cases "as equivalent to circumstantial evidence—that is for what it is really worth, when corroborated by other legal evidence." This "would at least subject the slayer of a slave to the necessity of standing a trial, and to the risk of being convicted."

A fourth evil protested by Lyon was the failure of the law to take cognizance of marriage and domestic relations among slaves. This shortcoming he referred to as "an outrage upon the laws of God, both natural and revealed;" it presumed that the slave was "not a man but a brute." The dereliction of legislation in sanctioning marriage and the family among the Negroes depreciated the slave's value as a servant, he argued, because it prevented him

from entering fully into all the experiences of parental and filial anxieties, hopes, joys and sorrows known to his master. Failure of the law to sanction marriage also encouraged slaves' running away, promoted promiscuous relationships among the blacks, made the slave women more susceptible to the wanton lust of vicious white men, and gave rise to other evils abhorrent to the highest sentiment of mankind.

Still another evil cited by Lyon was the withholding of religious ideas and instruction from the slaves. Religion made a slave happier, he argued, and enhanced his pecuniary value. "But even were it a dead expense," that would be no excuse for the neglect of a solemn Christian duty. Lyon closed his argument with a plea for immediate correction of the abuses which he had enumerated. He warned against waiting for "a more convenient season." "There never was a more suitable time . . . than the present, when the eyes of the whole civilized world" are turned upon the subject of reform.[8]

In his private journal Lyon stated that his report was well-received by the majority of the Presbyterian Assembly of 1863. But the opposition of some of the lay representatives who were "startled at the high ground" taken by the address and "afraid of outside political sentiment," prevented its adoption by getting it referred for another year to a committee headed by Lyon. In the Assembly of 1864 the report was called up for reconsideration; but after considerable debate it was again referred to a committee in whose hands it reposed until the end of the war. Lyon expressed the conviction in his journal that the majority of the members of the Assembly of 1864 were favorable to his reform proposals. Certainly the publication of his report and its consideration by the Southern Presbyterian General Assemblies of 1863 and 1864 did much to develop public sentiment on the subject of humanizing the slave code.

While Lyon was devoting his energies to the preparation of the report to the General Assembly, a fellow Presbyterian of North Carolina, Calvin H. Wiley, was writing a book on the subject of

[8]James A. Lyon, "Slavery and the Duties Growing Out of the Relation," *Southern Presbyterian Review,* XVI (1863), 2-37.

reforming slavery. This book, entitled *Scriptural Views of National Trials,* came from the press in 1863. Though there is a striking similarity in the views of Wiley and Lyon on the subject of purging slavery of its abuses, there is no indication in their available writings that either knew of the other.

In his book Wiley advanced the theory that wars were instruments used by the Almighty to punish wrongdoing and to reform society. The conflict then raging he interpreted as a scourge upon the Southern states for their sins, especially those in connection with Negro slavery. It had long been admitted by the Southern people, he stated, that the slave code was not what it ought to be. But, "reforms which the conscience of the whole church felt were demanded by the immutable law of God were adjourned for the reason that an attempt to effect them would be considered as a triumph for the free-soilers." This excuse was no longer valid, he continued. Some would argue that the time was not convenient; that reform should be postponed until the perpetuation of slavery was assured by a victory in the war. But "Will God trust us?", he asked, "Will God regard us as sincere?"

The author proceeded to enumerate Southern offenses in connection with slavery as follows: (1) over-concern with establishing the lawfulness of slavery according to the scriptures, and neglect of ascertaining the duties growing out of the master-slave relationship; (2) failure to insist on the sacredness of marriage and parent-child relationships among slaves; (3) disregard of the sanctity of the Sabbath in connection with slave-labor; (4) dereliction in giving religious instruction to Negroes; and (5) failure to give slaves the protection of the law against hard and cruel masters. The author closed his chapter on "Sins in Connection with Slavery" with a plea for immediate reform. "Suppose our national enemies do jeer us; shall we cower before the words of those whose swords we defy?"

After the publication of Lyon's and Wiley's works sentiment for reform increased. Great impetus was given to the reform movement by a sermon which the Reverend W. B. W. Howe delivered in April 1864 at St. Philip's church in Charleston. The occasion of

the sermon was a day of national fasting decreed by the Confederate Government. Speaking on the subject "Our Peculiar Sins," Howe urged the people of the South to search themselves in order to ascertain and correct the wrongdoing for which God was punishing them. He expressed the opinion that the chief leprous spot in the case of the Confederacy was delinquency of Southerners in the administration of their trust in connection with slavery. The institution itself he defended as just and biblical; but certain abuses in the administration of slavery he held to be utterly indefensible. These evils he enumerated as: complete denial of the right of manumission, prohibition of the teaching of slaves to read, and failure to sanction the marriage relation. These abuses, especially the last, he denounced as being contrary to God's law. Howe differed from Lyon, Wiley, and other reformers in that he advised postponement of reform until the end of the war; but he urged that the people "promise if God gives success" in the present conflict, "our wrongs in this respect will be righted."[9]

Howe's sermon aroused a spirited discussion of the reform issue. During the months which followed, a number of articles over such signatures as "Gideon," "Sinex," and "Dartmouth" appeared in the Charleston *Daily Courier*. The reaction was generally favorable to the sentiment expressed by Howe, though one correspondent, "Gideon," called the minister to task for advising a postponement of reform till the end of the war. "The reforming of our errors," wrote "Gideon," was "an essential part of self-preservation." Southerners could not expect divine assistance in winning the war, he added, until they "repent and abandon their sins in connection with slavery."[10]

The efforts of Howe, Lyon, and other Protestant churchmen to arouse sentiment favorable to reform were paralleled by similar activities on the part of Catholic leaders in the South. Outstanding among Catholic agitators for reform was the Right Reverend Bishop Verot of Savannah. This eminent churchman expressed the opinion that: "slavery to become a permanent institution of the

[9]Charleston *Daily Courier*, April 20, 1864.
[10]*Ibid.*, May 4, June 9, June 30, and August 6, 1864.

South must be made to conform to the law of God; a Southern Confederacy will never thrive unless it rests upon morality and order; the Supreme Arbiter of Nations will not bless with stability and prosperity a state of things which would be a flagrant violation of his holy commandments."[11]

Baptists and Presbyterians in the fall of 1864 began to support the reform movement with renewed vigor. The large and influential Georgia Baptist Association adopted unanimously a resolution petitioning the state legislature to enact measures sanctioning slave marriages. The church press took notice of this resolution and urged the lawmakers of Georgia and other states to act in accordance therewith. In discussions published during the closing months of 1864 and the early part of 1865 three ideas recur with noticeable emphasis: first, that the reverses of the Confederacy were evidences of God's displeasure with the Southern people for their refusal to cleanse slavery of its abuses; second, that the failure to correct patent evils in connection with the administration of slavery constituted a salient deterrent to recognition of the Confederacy by foreign nations; third, that reform of slavery should not be deferred because of fear of "I told you so" taunts from Northerners. The editor of the *Southwestern Baptist* epitomized this last view with the pungent observation: "It matters little to us whether friend or foe has been instrumental in showing us our sins in regard to this or anything else. The truth is not less the truth because the devil himself proclaims it. . . . It is both foolish and sinful to refuse to do right because our enemies will look on it as a triumph."[12]

Early in 1865 the secular press began to take increasing notice of the movement to humanize the slave code. The Richmond *Daily Dispatch* ran an editorial on January 30, 1865, headed "Religious Duties of Masters to Slaves," calling attention to reform activities of various religious groups. In January and February the Charleston *Daily Courier* published a series of editorials under the caption "National Sins." These articles emphasized the need of correcting flagrant evils incident to slavery. The failure to legalize slave mar-

[11]Richmond *Daily Dispatch*, January 30, 1865.
[12]*Southwestern Baptist*, November 10, 1864.

riage was referred to as "the distinctive and peculiar sin of the South." The editor rejoiced at the discussion given to the question of reform during recent months and urged legislators "to arrange and shape that reform into law."[13]

During the closing months of the war, the two arch-proponents of reform, James A. Lyon and Calvin H. Wiley, sought to expedite the adoption of remedial laws by bringing pressure on their respective state administrations. On January 24, 1865, Wiley wrote an eleven-page letter to Governor Vance of North Carolina in which he summarized the views on reform set forth in his book two years previously. After enumerating abuses growing out of the administration of slavery, he urged the governor to take the initiative in securing the romoval of these abuses by advocating revisions of the slave code. "I only ask what the law of God requires," he stated. "I solemnly believe it is our only road to independence." Urging the governor strenuously to "think on these things," he added: "God rules: He and He only placed you in power. Why not consult leading and Christian statesmen on this matter at once."[14]

The pressure activities of Lyon, paralleling those of Wiley, were more arduous than those of the North Carolina reformer. Lyon opened his propagandizing campaign by circulating among members of the state legislature copies of the report which he had delivered to the Presbyterian General Assembly of 1863. He then wrote Governor Clark of Mississippi a long letter, dated January 17, 1865, narrating his reform activities and informing Clark that a copy of the report had been mailed to him. After requesting that the governor read the report, Lyon suggested that Clark make some recommendations to the legislature for revision of the slave code. When the governor replied two days later that he had not received the report, Lyon wrote a second and a longer letter reiterating the abuses outlined in his report. He stated further his intention to prepare a reform bill for submission to the approaching legislature

[13]Charleston *Daily Courier*, January 19, February 9, 1865.

[14]Wiley to Governor Vance, MS. among Vance Papers in the Library of the North Carolina Historical Commission. Wiley sent his letter to the governor through Mrs. Vance because of her interest in the subject of reform and to assure the delivery of the missive while the governor was at leisure in his home.

and requested the support of the governor in procuring its enactment into law.[15]

Shortly after writing his second letter to Clark, Lyon proceeded to draw up a bill entitled "An act regulating the marriage and parental relations existing between slaves." He submitted the bill to Clark and, according to Lyon's journal, received the governor's approval of the measure. He then turned the bill over to "the three most able and influential members of the Senate" and urged them to commence agitation for its adoption. The bill was apparently introduced in the Senate and referred to the Judicial Committee. This Committee, according to Lyon, "reported favorably as to the subject but unfavorably as to the present being the most opportune time to legislate on the subject." However, one of the state senators promised to see that the bill was called up for consideration when the legislature should reconvene in the autumn. But the collapse of the Confederacy in April removed the necessity of further agitation.[16]

The tangible results of the movement to reform the slave code were meagre. Apparently only two legislative enactments may be attributed to sentiment engendered by the reformists. These were the Georgia law of April 18, 1863, repealing a previous act forbidding the licensing of Negroes to preach, and the Alabama law of December 1863 requiring masters to provide counsel when slaves were indicted "for any offense" and see that they had fair and impartial trials. But the paucity of tangible results should not be construed as indicating that the sentiment for reform was weak and restricted to narrow circles. The failure of reform agitators to secure the passage of remedial laws was attributable in great part to the absorption of legislatures in compelling questions of war. In the closing months of the conflict, when the movement for reform reached its peak, state legislators were too much harassed by the pressing problem of self-preservation to permit serious consideration of any but emergency defense measures.

[15]Lyon to Governor Clark, January 17 and February 10, 1865, MSS. Mississippi Archives.

[16]Lyon, Journal, entry for 1865.

The movement for reform was unquestionably a strong one. It had the support of some of the South's ablest leaders. It did not rest on an ephemeral wartime emotion, but it had been smouldering for many years beneath a silence imposed by fear of Northern abolitionists. Had the Confederacy won the war, there can be little doubt that the movement to humanize slavery would have been revived and agitated with renewed zeal by reformists of an independent South.

Night on St. Simons

The breeze is in the myrtles, tossing, swaying,
  Like waves that bow and break;
The sough blends with the echoing tide unstaying,
  Foaming and shimmering in the moon's bright wake.

Below the dunes the toiling waves upspringing
  Clutch at the sun-blanched sand;
Over their crests the sea wind lightly winging
  Blows a spume-scented breath upon the land.

Despite the winds' and waves' ceaseless commotion,
  Rest will compose all soon.
The quiet island by the unquiet ocean
  Sleeps in the radiance of the riding moon.

T. H. E.

Legend

By JAMES E. WARREN, JR.

This spring Mr. Warren for the second time won the Barrow Prize, awarded by the Poetry Society of Georgia, with a poem on early Georgia history. A recent stay on the campus of Emory College at Oxford, during the annual Writers' Conference, reminded him of the undergraduate residence there of his father, James E. Warren, '88.

Three years
My father walked these ways and climbed these stairs. . . .

And I could guess how, at a darkening window
Filled with slow afternoon, he often sat
Translating Virgil: here he heard the storm
That drove the huntress to the fatal cave
And drove the hunter; here he heard the fight
That murmured down the marble avenues
Of that sad fiery city in the night.

(O *Musa mihi causas memora!* Why
Should one be haunted so!)

But here he sat
Some twenty thousand afternoons ago
And read those verses clanging like a helm,
Shouting like shields, and slapping like the surf
Which beat the boats of those old wanderers.
And for a moment, as the dark came down
Across the oaks, across this alien town,
To these same gardens, came the Ancient Thing,
Gold-bright and furious and never still.
And he perhaps grew sad with listening.

Three days
Among the oaks and columns of this place. . . .

And I sit silent, writing poetry.
And now there comes to me
A smaller legend and a kinder tale:
The forms of dim professors—Moore, Magath
(*Nomina nostra,* his diploma read,
Subscripsimus—the names of the long-dead—
Collegii sigillo) Peed, Bonnell . . .
Ghosts to be met on any path
Of that loved paradise which lies
Between the Stewart House and Seney Hall. . . .
The beards . . . the canes . . . the all-memorial eyes . . .
The Latin . . . and the laughter . . .
All the triumphant pain
Of going home, of coming back again. . . .
And these all living still and singing after
So many springs and autumns, and beyond
So many million acorns dropping and oaks
Laying their golden leaves against the ground,
So many generations of hollyhocks
That climbed and withered and climbed and withered away
Until this stranger day.

These are the stuff of legend, dreams that start
Some dear Aeneid, and to the listening boy
Become as bright as Helen in the heart,
Tremendous as a Troy.

The Application of Science in the Petroleum Industry

By GOULD H. CLOUD

Gould H. Cloud, A.B. (Arkansas College) '31, M.S. '32, Ph.D. (Buffalo) '35, is Research Specialist in the Production Research Division of the Humble Oil and Refining Company, Houston, Texas. The following address was presented at the November meeting of the Emory Chapter of the Society of the Sigma Xi.

IT IS MY PURPOSE to bring to your attention briefly the rôle the scientist has played in the development of our oil industry as a whole and to outline in more detail the work of the chemist and engineer in my particular field of endeavor, production research. In view of the fact that the industry is commemorating this year the ninetieth anniversary of the drilling of the first oil well by Colonel Drake, I would like, also, to call to your attention some historical and statistical highlights of the industry. Pennsylvania "rock oil" was an article of commerce before Drake's time. Skimmed from springs and salt wells, it brought a high price as a cure-all medicine. One Connecticut user thought this would be a good "racket" to "get in on;" so he organized a firm to exploit some well-known oil springs near Titusville, Pennsylvania. But since he couldn't afford a ticket to Pennsylvania, he "cut in" Edwin L. Drake, a railroad conductor who had a pass and could ride free. Drake's plan was to dig pits around the springs to catch the oil, but he was plagued with difficulties because the ground kept caving in. In desperation he called in a salt-well driller who was experienced in deep (fifty feet or so) holes. They invented casing through the necessity of having to drive pipe into the muck of the swamp to protect their hole. They didn't get a gusher, but at sixty-nine and a half feet they were able to bail enough oil to break the medicine market.

That would have been just about the whole story of the oil industry had it not been for the fact that whales began getting scarce

and there was a need for a substitute for whale oil for illumination. A substitute illuminating oil made from coal was bringing fancy prices, and the petroleum-medicine men thought they might add a profitable sideline by breaking into the "coal oil" business. Run through a coal still, the rock oil yielded a lamp oil much superior to that from coal. This started the oil boom that has culminated in our present industry.

As for Drake, about all he got out of it was the honorary title of Colonel and the knowledge that his railroad pass had carried him to a firm niche in history as the man who drilled the first commercial oil well in the world.

Drake's venture, that was started for the purpose of supplying "rock oil" to peddle as a magic cure-all, ushered in the age of hydrocarbons, which has done more to develop and enrich our country than has any other single factor in our nation's history. Petroleum has revolutionized industry and transportation; it has created untold wealth, built cities, furnished employment for hundreds of thousands of people, and has contributed billions in taxes to support institutions of government. The value of the petroleum products produced in 1948 was far greater than all the gold and silver mined in the U.S.A. since early colonial times. In a brief span of years, petroleum has radically altered man's life in our own country and throughout the world.

Most of us are aware of the dependence of the automobile, the airplane, the modern locomotive, and mechanized farm equipment on petroleum, but many are not aware of the extent to which it has reshaped our pattern of industrial and community life. Hence, retail stores, restaurants, residential developments, and thousands of other phases of our national life have come to be dependent upon the maintenance of high-volume production and transportation, and therefore upon an abundant supply of petroleum.

Oil has also become the most highly prized of all commodities used in modern warfare. Besides powering all forms of mobile units, oil is a basic ingredient used in manufacturing almost everything from the explosives in shells and bombs to synthetic rubber tires and plastic materials of all kinds.

Up to the present time petroleum has been essentially an American enterprise. More than 60% of the world supply is still produced in this country and our percentage of total world consumption is still slightly greater. This year, within our continental boundaries, the average per capita consumption will be in the order of fifteen barrels or 630 gallons (two gallons per day). No other country approaches this average. In Canada, our friendly neighbor to the north, the per capita consumption is about one-half that in our country. The average petroleum requirements of the fifty million people of the United Kingdom are about 13% of ours. Over a large part of the world, applying to more than 50% of its population, the average demand amounts to a few gallons yearly. Thus, we, who constitute 7% of the world's population, consume about two-thirds of the petroleum produced.

Our increasing rate of petroleum production has resulted in many predictions that our supply would soon be exhausted. However, those who are thoroughly familiar with the oil picture do not share

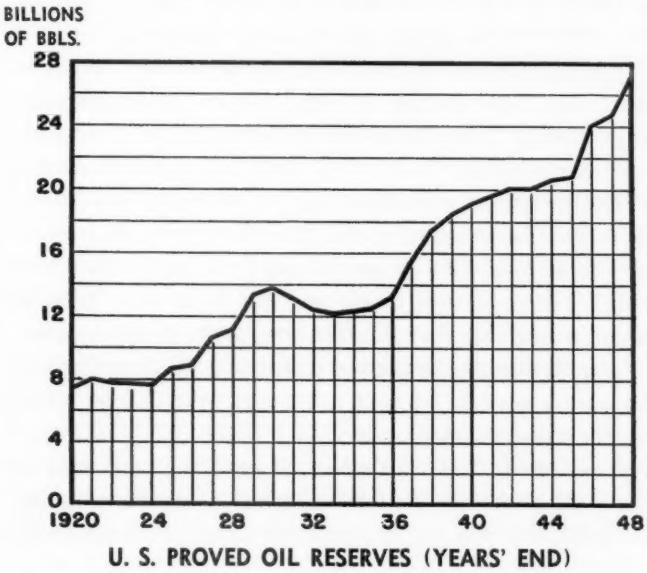

Fig. 1

the fear that our petroleum supply will fail abruptly. Oil shortage scares stem from the failure to understand the true meaning of oil reserves. The increase in proved reserves from 1920 to 1948 is shown in Fig. 1. It is evident from these data[1] that reserves have about quadrupled in the past twenty-eight years. The abrupt increase in 1946 is due to a great extent to the fact that liquids from natural gas were included for the first time with the crude oil reserves. These data do not mean that there is in the United States only twenty-seven billion barrels of oil; rather, they represent an estimation of our working stock. The amount drawn from it depends on the demand for oil as well as on the rates of production that are considered to be the most efficient for each field. The exploration for and discovery of oil is a continuous operation the same as is production. When prices are high, exploration efforts are intensified. The increase in oil reserves has been accompanied by a proportionate increase in consumption. At the end of 1948 consumption was approximately two billion barrels per year.

In a speech before the United Nations at Lake Success on August 22, 1949, Dr. Levorsen of Stanford University said: "The most promising regions of the world for discovery of substantial new petroleum reserves are in and adjacent to those provinces already producing. More is known of the conditions of these areas; more drilling is being done; and opportunities for discovering deeper sands, lateral extensions, and unforeseen conditions are much greater. Geographically, the U.S.A. appears no more favorable for the accumulation of petroleum than many other areas of the world. Yet thousands of oil and gas fields have been found. This is due to the fact that the free enterprise, profit-incentive system is the most effective in the search for new oil deposits."[2] If we maintain such a system, we need not worry over lack of petroleum reserves for many years to come.

Petroleum research started when the medicine men tried distilling their rock oil to see if it would yield kerosene. Because the material produced was far superior to competitive products and

[1] *Petroleum Data Book*, 2nd Ed., 1949, p. C-4.
[2] *Oil and Gas Journal*, August 25, 1949, p. 75.

because the technology of separation by distillation was relatively well-known, research did not become a real factor in the industry until some twenty-five years later, when the oil supply from Pennsylvania failed to meet the demand and it became necessary to use crudes from other areas, many of which contained sulfur. This necessitated research to remove sulfur from the kerosene. With the advent of the gasoline-engine-powered automobile in about 1910 came a shift in the demand for petroleum hydrocarbons. Gasoline, which had previously been discarded, became the most prized fraction of the crude. This stimulated research that finally resulted in cracking heavier hydrocarbons to form gasoline.

Because the cracking of hydrocarbons offered a means of greatly increasing the gasoline available from a given amount of crude, and because it produced better motor fuels, it has been a fertile field for the application of new ideas. Thousands of patents have been issued covering various phases of the process, and a prodigious amount of literature has been published on the subject.

Through the efforts of the chemist and the chemical engineer, the quality of fuels and lubricants has been improved continuously, while the cost of manufacturing these products has been greatly reduced. In addition, they have produced some 5,400 valuable by-products from petroleum. About 80% of the toluene used to make our explosives in World War II was produced from petroleum. In 1945 the amount made from petroleum was seven times that from coal. At the beginning of World War II the amount of synthetic rubber used in the U.S.A. was only about 1% of that of natural rubber, but by 1945 synthetic rubber constituted 85% of that used. The petroleum industry played a big part in the research and development that made possible this enormous increase in rubber supply.

The work of the scientist has been fairly well publicized in the fields of petroleum refining and manufacturing. His impact on prospecting for, drilling for, and production of oil are not so well-known. In the early days "oil springs" offered a good indication of the presence of petroleum reservoirs. Modern oil exploration makes use of surface geology, but it relies largely on delicate electronic

instruments such as the seismograph, the gravity meter, and the magnetometer. These instruments do not detect oil; they are used to indicate the shape of rock formations miles down in the earth and permit determining whether the formations are of the right shape for trapping oil. The seismograph is used to measure explosion vibrations reflected from rocks deep in the earth, the gravity meter actually weighs the rocks several miles beneath it, and the magnetometer measures the intensity and direction of the magnetic forces of the rocks. The last-named instrument is so rugged that it can be flown over an area in a plane, mapping the underground structure as it goes! Of the wildcat wells, all wells drilled in new territory, about one in six is a producer of gas or oil. The few optimists who drill wells without the aid of the new exploration instruments find oil in about one well out of eighteen.

Application of new ideas to drilling equipment and methods has resulted in a tenfold increase in drilling rate since 1920 and has increased well depths from about 5,000 feet to better than 20,000 feet. This latter development has quadrupled the volume of earth from which oil can be recovered. Oil is now being produced from depths below 15,000 feet. More than one and a quarter million wells have been drilled in the U.S.A. since 1859 in the never-ending search for petroleum. These wells have varied in depth from only a few feet to a recent well drilled to 20,521 feet (approximately four miles). More than 75% of the total have been drilled in the past thirty years. The largest number of wells drilled in any one year occurred in 1948, when more than 39,000 were sunk into the ground. This was an average of one completed every thirteen minutes.

In production research, my particular field of endeavor, developments resulting from the application of new ideas have been as important but probably not as spectacular as have the developments in exploration, drilling, and refining. In our organization, production research covers mainly studies pertaining to drilling muds, cements, well logging, sand consolidation, corrosion, and reservoir behavior.

Advances in the technology of drilling muds have contributed

much to the progress made in rotary drilling. In the drilling operation, mud is circulated down the drill pipe, out through holes in the bit, and up the annulus between the pipe and the hole. Its chief functions are to lubricate and cool the bit, to bring cuttings to the surface, and to prevent formation fluids from entering the hole. To do a satisfactory job, a mud must have sufficient viscosity to lift the cuttings, but viscosity must not be high enough to limit pumpability; it must have sufficient gel strength to hold cuttings in suspension when circulation ceases, but gel strength must not be so high as to cause difficulty in removing the cuttings from the mud at the surface; its weight must be sufficient to prevent "blowouts" when formations containing fluids under high pressure are penetrated; and under certain conditions its filtration, tendency to lose water to a porous formation, must be low.

In almost all cases the muds used in modern rotary drilling are treated with chemicals to improve their performance. For example, weighting materials are added to increase specific gravity. Chemicals such as caustic and quebracho and polyphosphates are added to reduce viscosity and gel strength. Starch, cellulose esters, and other materials are added to reduce filtration. These are but a few of the several hundred materials that range from table salt to comminuted (finely-divided) feathers that have been disclosed in the literature as additives for drilling muds. The state of the art is such that most operators employ a mud engineer to assure proper control of mud properties.

Cement is used in well completion to seal casing in place for the purpose of isolating a formation from strata above or below it. This sealing is accomplished by pumping cement down the pipe and up the annulus between the pipe and the borehole. Ordinary Portland cement has been used for the most part for this purpose. However, new well completion methods, increasing well depths, and observations based on past experience have indicated the need for modification of cement properties to produce a product that will do a better job than has been done in the past. Several additives have been disclosed for improving fluidity and reducing settling and water loss, but they have not come into general use. There is also

a need for materials that will permit closer control of set time and tensile strength of cements.

Until relatively recently, rotary drillers depended on oil and gas "shows" in the mud, the "feel" of the bit, the taste and visual characteristics of cuttings, *etc.*, as means of determining the presence of hydrocarbons in a formation. No doubt, many producing formations have been passed up because of the inadequacy of such methods. I recall one case where a well started flowing oil and opened up a new field two years after it had been abandoned as a dry hole and the leases had been forfeited.

There are now in use several well logging devices that greatly reduce the possibility of such an occurrence. An electrical logging device that may be used to explore the entire borehole records the self potential and resistivity of the formations. The results obtained have been found very useful in locating strata that may be productive of oil. Induction logging, *i.e.*, measuring the inductance rather than the resistance of a formation traversed by a borehole, is a new and promising method. Natural or induced radioactivity of reservoir rocks is measured and recorded by ionization chambers which traverse the bore as do the electrical logging instruments. Both neutron and gamma ray logs are obtained. These may be run in open or cased hole, and they are used to indicate the nature and fluid content of subsurface formations.

Petroleum reservoirs consist for the most part of porous sandstone or limestone. The producing formation in many sandstone reservoirs is incompetent, *i.e.*, the sand is held together only loosely. In such cases loose sand may be produced with the well fluids. The production of sand causes much trouble by cutting out the equipment used to recover the hydrocarbons and blocking the flow of fluids. It has been common practice to use various types of screens to reduce the amount of sand produced. However, certain formations contain sand that is so fine and so incompetent as to make it economically impracticable to screen it out. In such cases, as well as in some of the less extreme cases, sand consolidation with thermosetting plastic materials has presented a solution to the problem. In a method developed in our laboratory, the sand for a foot or

two around the borehole is consolidated by forcing into it a solution containing phenols, formaldehyde, a catalyst, and water; this solution separates to form a resin and water. The resin preferentially wets the sand and hardens in place, leaving 50% to 60% water in the pore spaces. The water is flushed out when the well is put on production. The consolidated sand prevents the loose sand from entering the well bore. The sand may be consolidated also by pumping a liquid resin into the formation and flushing it out before it has time to harden. Since the resin preferentially wets the sand, some of it is left on the surface of the sand grains and causes them to stick together. Consolidation by treatment with resins will, no doubt, play a vital part in future production, particularly offshore production, because the formations in which the oil is being found are young geologically and the sands are generally incompetent.

The problem of corrosion of oil-producing equipment has become more acute in recent years because many of the newer fields produce sour crudes, crudes containing hydrogen sulfide, and many high-pressure condensate fields produce sufficient carbon dioxide to cause corrosion of equipment. Because of the deteriorating effects of salt water, the problem of corrosion is greatly increased in offshore operations. The higher temperature associated with deeper holes also promotes corrosion. "Down the hole" treatment for corrosion prevention is becoming a common practice. Materials such as sodium carbonate that lower acidity are being used successfully to reduce corrosion in condensate wells, and a variety of materials are being tried as inhibitors for hydrogen sulfide corrosion. A solution to the corrosion problem is also being sought through the use of plastic and metallic coatings as well as through the use of corrosion-resistant metals.

Of all our research problems, reservoir behavior is probably the most important. Research dealing with the recovery of oil and gas from underground reservoirs, both in the laboratory and in the field, has resulted in a better understanding of the way in which oil, gas, and water move in underground reservoir rocks. Thus we now appreciate the value of controlling the production ratio of gas to oil, and in some reservoirs of encouraging and controlling the encroachment of edge waters to increase recovery. For example, it is

estimated that, as a result of controlled operations, more than a billion more barrels of oil will be produced from the East Texas field alone than would have been obtained if the field were produced wide open as in the days of the gushers.

We now fully appreciate the value of augmenting the native energy in the reservoir by injecting gas or water under controlled conditions to increase recovery. In the Bradford, Pennsylvania, field, so-called secondary recovery operations, involving the injection of gas and water, have resulted in the recovery of more oil from the field after it had been depleted by primary methods than was produced by the early exploitation methods. In general, the increased knowledge of reservoirs and fluid flow has made it possible to get 60% to 75% of the oil out of the ground, once the producing formation has been discovered, instead of only 20% to 30% as used to be the case.

To plan intelligently the best course to follow in producing a field, it is essential that much basic information be obtained. Analysis of cores from the producing formation is necessary in order to determine the porosity and permeability of the rock. Knowledge of the temperature and pressure under reservoir conditions is essential. Samples of reservoir fluids are trapped opposite the producing formation in the borehole in pressure-tight containers, brought to the surface, and examined in the laboratory under the same conditions of temperature and pressure that exist in the reservoir. Reservoir engineers use the information thus obtained to determine how a given field should be produced. The discovery that the flow of electric current in an electrolyte is analogous to the flow of fluids in a formation has made it possible to set up electrolytic models of oil fields and to determine from such models the best course to follow in exploiting the fields.

In general, our job in production research is to produce more oil, to reduce the cost of production, to promote conservation, and to do these jobs in such a way as to stabilize the industry. Although this summary has indicated considerable progress, there remains much to be done. There is a great need for more fundamental knowledge in all phases of the work.

D. H. Lawrence in Mexico

By ELIOT G. FAY

D. H. Lawrence spent several months in Mexico in 1923 and 1924. Last summer, in Chapala and in Oaxaca, Professor Fay had an opportunity to compare these places with Lawrence's description of them in two books and in his letters. The following study deals with the English writer's life and state of mind while living in Chapala.

AT THE TIME of D. H. Lawrence's first visit to Mexico, in 1923, he and his wife Frieda had been living on a small ranch in the mountains of New Mexico. After a winter spent at an altitude of nearly nine thousand feet, they were eager to taste the blessings of a gentler climate. They were accompanied on their journey by the poet Witter Bynner and by Bynner's friend "Spud" Johnson, editor of an esoteric magazine, *The Laughing Horse.*

On arriving in Mexico City, in March, the Lawrences went to stay at the Hotel Monte Carlo. They thought the city rather tawdry. Lawrence, in a letter to Catherine Carswell, called it "ramshackle and Americanized." A bullfight which he attended there disgusted him. However they enjoyed their excursions to various shrines of the Aztec civilization, notably to the Pyramid of the Sun at Teotihuacan. Lawrence sent Catherine Carswell a postcard photograph of himself, Frieda, and Bynner standing on top of the pyramid. On the postcard Lawrence had written that Teotihuacan was even more impressive than Pompeii or the Roman Forum.

At the end of April, Lawrence and Frieda went to Guadalajara, and from there to Chapala, on the lake of the same name. This was to be the scene of Lawrence's novel, *The Plumed Serpent.*[1] At Chapala, where they were joined by Witter Bynner and Spud Johnson, they rented a house belonging to the Hotel Palmera, at Zaragoza No. 4. The Hotel Palmera is now the Hotel Nido, and no longer owns the house where Lawrence lived. Moreover, the house itself is extremely difficult to identify, since all the numbers on the Calle Zaragoza have been changed.

[1]New York, Alfred A. Knopf, 1933.

II

Lawrence's letters to his friends, while he was living in Chapala and writing *The Plumed Serpent,* indicate very clearly his preoccupations and his state of mind. In a letter to Curtis Brown, his London literary agent, he writes that he has begun a new novel, and that he hopes to finish the first draft early in July. He writes to Middleton Murry that he has found Lake Chapala a better place in which to work than Mexico City. Murry had founded a new shilling monthly, *The Adelphi,* and had asked Lawrence to contribute to it. Lawrence replied that he would send him the opening pages of his novel, which described a bullfight, within two days. He added that someone in Chapala had offered to be his partner in establishing a banana plantation, but that he hesitated to embark on such a venture, especially without seeing England again first. Here we have a touch of Lawrence's characteristic longing to escape from England, his longing to return to England, and his hesitancy to move in one direction or in the other. The question of acquiring property on Lake Chapala is raised again in a letter to Knud Merrild, one of the two Danish artists who had lived with the Lawrences on their New Mexican ranch. In this letter he says that he and Frieda have been looking at *haciendas* on the lake, but that they are afraid to buy because of a possible revolution. He adds in the same letter:

> But I really hope that before long we may meet again, all of us, and try to make a life in common once more. If I can't stand Europe we'll come back to Mexico and spit on our hands and stick knives and revolvers in our belts . . . and have a place here. . . . We have to be a few men with honor and fearlessness, and make a life together. There is nothing else, believe me.[2]

The above passage illustrates Lawrence's ever-recurring desire to go with a few chosen friends to some remote spot, and to establish a utopia there.

At Chapala Lawrence sat under a pepper tree, beside the lake, writing *The Plumed Serpent.* Frieda went bathing in the whitish

[2]David Herbert Lawrence. *Letters,* ed. by Aldous Huxley (New York, The Viking Press, 1932), p. 576.

water. One day a large snake, lifting its head high above the surface near where she was standing, gave her an ugly fright. Because she was frightened also of bandits, a young Mexican was hired to sleep outside the bedroom door with a loaded revolver. Lawrence designed some *sarapes,* which they had woven by natives on the other side of the lake. The boat trip referred to in his letter to Knud Merrild was taken in a huge old "ark," with three guests and with three Mexicans to handle the boat and play guitars. Once they landed on an island called the "Isle of Scorpions," where there was an abandoned prison. Here Lawrence bought a goat, which the Mexicans slaughtered and skinned for food.

In July the Lawrences left Mexico, planning to return to England *via* New Orleans and New York. On arriving in New York Lawrence decided not to return to England after all. He wrote to Knud Merrild:

> I think I shall stay on this side. I don't want to go; don't know why. I think, when Frieda has gone, I shall come to Los Angeles. We might like to spend the winter at Palm Springs or among the hills. Of we might go again to Mexico. And I should like to see you and Götzsche and have a talk about the future. If there was nothing else to do, we might take a donkey and go packing among the mountains. Or we might find some boat, some sailing ship that would take us to the islands.[3]

The above excerpt suggests at least a temporary rejection, by Lawrence, both of England and of his wife, in favor of a westward voyage with male companions. A week later, however, he writes to Middleton Murry that he has a "heavy feeling in his belly" when he thinks of his home and of his people back in England. Poor Lawrence, tortured constantly by indecision and remorse!

There was no indecision in the mind of Frieda. She wanted to go to England to see her children and to Germany to see her mother. On August 18 she sailed for Southampton on the S.S. *Orbita,* of the Royal Mail Steam Packet Line. Lawrence wrote to Middleton Murry and to Catherine Carswell asking them to look after her a bit in London. Then he went to California.

[3] *Ibid.,* pp. 579-80.

III

This is perhaps as good a place as any for a brief discussion of *The Plumed Serpent,* the novel Lawrence wrote while he and Frieda were living at Chapala, and which he first intended to call by the name of the Aztec god, Quetzalcoatl. Of this book Middleton Murry says: *"The Plumed Serpent* is absorbing both as a document and as an imaginative achievement. It is Lawrence's last effort at complete expression of himself in his fulness. . . . It is Lawrence's greatest work of 'art.' But," he adds, "the triumph of the 'artist' is the defeat of the prophet."[4] In this, as in other matters, Murry disagrees with Catherine Carswell, who writes:

> Surely here is the most ambitious and most impressive novel of our generation. If any has been more faultless, which has possessed in the same degree the blazing virtue of potency? . . . So far from showing "disintegration" it creates. In it Lawrence's powers as a novelist are established and his thoughts as a man embodied to that extent that it would have assured him his place without further production.[5]

Murry's opinion, on the contrary, appears to be reflected in the following statements by Hugh Kingsmill:

> In comparison with *The Rainbow* and *Women in Love,* the uprush from the dark unconscious has lost a good deal of its momentum in *The Plumed Sergent.* Lawrence was getting tired, and the effort to present himself as daemonic was becoming increasingly fatiguing. . . . Not so lush as *The Rainbow* and *Women in Love, The Plumed Serpent* is at least as preposterous, the difference in verisimilitude being only such as might exist between one of Tennyson's *Idylls of the King* rewritten in a madhouse by Dostoieffsky, and Rider Haggard's *She* transposed by Nietzsche into the style of *Also Sprach Zarathustra.*[6]

The heroine of *The Plumed Serpent* is an Irish widow named Kate Leslie, who is in her early forties. Her initial impressions of

[4]John Middleton Murry. *Son of Woman: The Story of D. H. Lawrence* (New York, Jonathan Cape and Harrison Smith, 1931), pp. 296-7.

[5]Catherine Carswell. *The Savage Pilgrimage: A Narrative of D. H. Lawrence* (New York, Harcourt, Brace and Co., 1932), p. 183.

[6]Hugh Kingsmill. *The Life of D. H. Lawrence* (New York, Dodge Publishing Co., 1933), pp. 214-16.

Mexico, like those of Lawrence himself, are of something evil, something cruel, something sinister. She is disgusted, as he was disgusted, with the spectacle of the bullfight. Presently, however, Kate becomes interested in the Aztec god Quetzalcoatl, who is half bird and half serpent, and who represents the breath of life. She meets two Mexicans, Don Ramón and Don Cipriano, who plan, for political reasons, to revive the worship of Quetzalcoatl. Don Ramón poses as the incarnation of the Aztec god, while Don Cipriano claims to be that of another god, named Huitzilopochtli. Kate is persuaded to accept a metamorphosis into Malintzi, priestess of the peculiar cult. She even allows Don Ramón to marry her to Don Ciprano, with a ceremony in which she says: "This man is my rain from heaven," and Don Cipriano responds: "This woman is the earth to me." But Kate refuses, after the ceremony, to live with Don Cipriano as his wife. For a time he resigns himself, concentrating, with Don Ramón, on the propagation of the mystic religion. Later, when he seeks again to press himself upon her, Kate declares that she is sick and tired of the Aztec gods, of their latterday impersonators, and of her own rôle as the priestess of their flimsy cult. In the end, though, when Don Cipriano returns triumphant from a series of bloody battles, she comes to him to be his wife forever.

The Plumed Serpent is by no means as "preposterous" as Hugh Kingsmill would have us believe. Nor can one agree with Catherine Carswell in calling it "the most ambitious and the most impressive novel of our generation." She is right, however, in insisting that the novel possesses, to a high degree, "the blazing virtue of potency." *The Plumed Serpent* is rather long, and it has perhaps too much talk in it. But it is a powerful evocation of Mexico, both past and present.

IV

From Los Angeles, in September, Lawrence wrote to Spud Johnson that he was going to Lower California, or possibly to "the Pacific Isles." A week later he wrote to Middleton Murry that he was about to travel down the west coast of Mexico, with a Danish

friend, looking for a place to live. They might be able to found a ranch, and give he world "a new navel, a new centre."

The "Danish friend" was Götzsche, whom Lawrence met in California, and with whom he journeyed down the west coast of the Mexican state of Sonora. The October sun was scorching, and the roads were wretched. Yet there is a sort of grim humor in the following paragraph of a letter to Knud Merrild:

> A circus follows us down the coast and the lions roar all night. The turkeys put their heads through the door—the doors are just wooden gates—and gobble at dawn. The people in the street linger to look in and see how you're sleeping. The horse-riding lady from the circus has the next room, and stalks about with yards of bushy hair sticking out, rather fat inside a violent dressing gown."[7]

Lawrence found the west coast wild and "hopeless." But he admired the "strange and beautiful" country round Guaymas. It was full of wild ducks, geese, and pelicans. A man there offered to give him six or eight acres of land on which to build a house. Yet Lawrence hung back. The place was just too lonely. A cattle ranch he visited seemed "desolate" and "brutal."

A letter Lawrence wrote to Witter Bynner at this time is filled with vivid description: "There is a blazing sun, a vast hot sky, big lonely inhuman green hills and mountains, a flat blazing littoral with a few palms, sometimes a dark blue sea which is not quite of this earth."[8] He goes on to speak of buzzards thick as flies, and donkeys moving in a golden cloud of dust. Abandoned silver mines were hidden in the mountains. Dead dogs sometimes lay stretched in the middle of the market places. Many of the *haciendas* were owned and operated by Chinese, by whom Lawrence considered the coast to have been infested. Lawrence ended by saying that he and Götzsche, when they got to Mazatlán, would probably take a boat to Maryanillo [Manzanillo?], and go from there to Guadalajara.

Frieda wrote to Lawrence telling him that England was the place for him, and that she wanted him to come home. He did not

[7]Lawrence, *Letters*, p. 586.
[8]*Ibid.*, p. 587.

do so at once, however. Could it be that knowing she wanted him gave him the necessary courage to remain away from her? At any rate, having installed himself at the Hotel García, in Guadalajara, he wrote as follows to Catherine Carswell:

> Mexico has a certain mystery of beauty for me, as if the gods were here. . . . I wish it could be that I could start a little centre —a ranch—where we could have our little adobe houses and make a life, and you could come, with Don and John Patrick.[9]

Here it is again—the utopia complex! And Lawrence's pathetic indecision is once more expressed at the conclusion of his letter where he hints that, after all, his destiny may be in Europe.

By November Lawrence had indeed made up his mind to return to England; for, as he explained in a letter to Miss M. L. Skinner, with whom he was collaborating on *The Boy in the Bush,* it was necessary, since his wife refused to join him in Mexico, for him to join her in England. And to his agent, Curtis Brown, he wrote that he was going on to Mexico City, and from there to London, which he hoped to reach in time for Christmas. By mid-November Lawrence had arrived at the Hotel Monte Carlo in Mexico City. From there he wrote to Spud Johnson: "I am off to Europe—*la mala-suerte.* We sail, Götzsche and I, on the *Toledo,* from Vera Cruz, on Thursday . . . and I get to Plymouth about 12 Decem."[10] He states that a serious revolution is in the making. There is "no business doing," and the common people are "a bit brutal." "I bought a *sarape* in the Volador," he remarks, "dark brown with big white stripes and *boca*—eleven *pesos.*"[11] Then the inevitable utopia: "I hope we shall all one day become quite nice people, and make a new spot on earth, more or less together."[12] Lawrence's last letter from Mexico was addressed to Harriet Monroe, whom he told that he was "not very keen on going to Europe." And, in fact, after four months in London, Baden-Baden, and Paris, followed by six months at his Kiowa ranch, Lawrence was back in Mexico again, ready for his Oaxaca venture.

[9] *Ibid.,* p. 589.
[10] *Ibid.,* p. 593.
[11] *Loc. cit.*
[12] *Loc. cit.*

China and the Open Door Policy

By Arva C. Floyd

There is no problem of the United States foreign policy more critical and more baffling than that which concerns China in its present turmoil of civil war. Arva C. Floyd, Ph.B. '23, B.D. '24, Ph.D. (Yale) '39, Professor of Missions and Oriental History in the Candler School of Theology, seeks to throw light on the situation by examining the historical relations between America and the Orient.

One of the great pillars of American foreign policy for nearly half a century has been that which expresses our traditional concern for China, commonly called the Open Door Policy. But today, with momentous developments taking place across the Pacific, no one hears of it any more.

In keeping with that policy, America took the lead in holding the door into China open to all the world. Before 1900 the European powers were extremely jealous of one another in their imperialistic designs upon China and seemed bent upon dividing up that ancient land. In a rather tense situation America came forward with the suggestion that access to all parts of China be available to all nations for trade on the basis of equality of opportunity. The proposal was accepted, and thus began the Open Door Policy.

While our government was primarily concerned with our future commerce with China, the Open Door Policy did in time have the effect of casting America in the rôle of "big brother" to China and, by implication, of extending our interests to other parts of Eastern Asia. Moreover, we acquired Hawaii far out in the Pacific, took over Wake Island and Midway, about half-way across, and seized the Philippines, almost up against the continent of Asia. Thus America came to be intimately involved in the affairs of the Far East, and in conjunction with the Open Door Policy we were rather deeply committed.

This whole development in the Pacific was in bold contrast to our announced purpose in the Atlantic and Europe. Since George Washington's time we were determined to "avoid entangling alli-

ances." Our background was European, and the memory of European intrigue and continuous bloodshed was repulsive. We wanted none of it; we would leave Europe severely alone. There was for us no such precedent in Asia, and instead of playing "hands off" in that part of the world, we deliberately played "hands in."

Our commitments in the Far East ultimately led us into war. At first somewhat meager and hesitant, our Open Door Policy had expanded in sentiment and content. In no small degree it was that policy which carried us into war with Japan.

Japan openly began to flout the Open Door Policy when her militarists invaded the Manchurian provinces of China in 1931. When we opposed such action in one protest after another, we came dangerously close to war. We led the other nations in a refusal to recognize the puppet state of Manchukuo which Japan fashioned out of her conquests. The whole Manchurian incident remained a source of friction and ill-feeling between us and the Japanese from that time forward.

Japan continued her affront to our cherished policy when she invaded China proper in the summer of 1937. Time and again we came to the brink of hostilities with Japan over her complete disregard of our interest and concern in China. Many were saying that a showdown must come eventually. At the time, one of our leading authorities on Far Eastern affairs took the position that under no circumstances could we allow any outside Power to dominate China. China completely free and open was the *sine qua non* of stable peace in Eastern Asia.

Meanwhile there had developed in Japan a vigorous party advocating the "Southward Drive"—contending that Japan's greater destiny lay southward, along the coastlands of Asia and in the vast island world beyond, rather than in the interior of the continent. There again, however, America's traditional interest in Eastern Asia seemed to stand athwart Japan's road to empire, or at least to challenge her ambitious schemes.

When the Nazis overran Holland and France and brought Great

Britain to the brink of disaster, French Indo-China, British Burma and Malaya, and the fabulous wealth of the Dutch East Indies were all left relatively unprotected, and in a tantalizing manner they dangled before the itching fingers of Japan like plums ripe for the plucking. The temptation was all but irresistible.

Recall now the ill-fated Nomura and Kurusu missions to Washington. Insistently they pleaded that America relax her vigilance and stand aside to permit Japan to go forward. But when at last they came to be convinced that America was not to be persuaded, the leaders in Tokyo took the initiative and struck quickly to neutralize American power in the Pacific. With a serious obstacle thus removed, they raced southward. They made a desperate gamble, rather than leave America on their flank in the Philippines, free to decide when and where she might intervene.

Japan did not want war with America. She accepted it as a terrible necessity in order to realize her dreams in the south. Prior to the event, one Japanese educator summed it up this way: "Japan does not want to fight America. But she does want to do what she wants to do." And she knew she could not do it without first dealing with America, who stood in her way.

Almost from the beginning, in their relationships with China in modern times the Western Powers dealt coöperatively. After agreeing among themselves upon a common course of action, they presented a united front to China. Although America was the chief sponsor of the Open Door Policy, it was arrived at only after tacit agreement among the powers. Nearly a quarter of a century later, in the Washington Conference of 1921-22, the main elements of the policy were written into the Nine-Power Treaty, and thus gained the added force and prestige of formal international commitment. By that time Japan had won a place for herself among the powers, joined with them in their dealings with China, and signed the Nine-Power Treaty.

A little later, however, Japan pulled away from the West and became a lone wolf in forming and executing her own China policy.

As she pressed forward and embarked upon a program of single-handed aggression, the other powers standing together ranged themselves over against Japan to retard and obstruct her intrusions upon China. Together they staged the Brussels Conference in a futile effort to discover a formula for stopping Japan. Likewise the Stimson Doctrine of refusing recognition of Manchukuo was a joint procedure.

The early events of World War II in Europe had the effect in Asia of eliminating one by one those powers which stood with America to counterbalance Japan. When the number was whittled down to one, and America stood alone in facing Japan, war followed.

In the initial stages of the war in the Pacific Japan made sweeping gains, but the tide soon was turned, and when she was brought ultimately to defeat, the coalition had formed once more. Now it was the United Nations against Japan. In the latter part of the war the United Nations worked together rather smoothly, and it appeared that together they would restore China and nurture her recovery. But our easy-going assumptions all too quickly were dashed.

The coalition which won the war promptly fell apart in victory. And most of those powers who formerly had played leading parts in the Far East—Britain, France, and Holland—now were too far spent to regain commanding positions in Eastern Asia. Again, therefore, America among the Western democracies was left standing alone.

As Japan earlier pulled away from the coalition to pursue her own purposes in Eastern Asia, so now Russia has taken that rôle. Once again the field is narrowed down to two contestants for primacy in the Far East—Russia and the United States.

Since V-J Day elements of futility and frustration have characterized American policy in China. The Nationalist Government came through the war intact. With it we had been working for nearly twenty years, and we naturally expected to see it rebuild its strength and lead China into a new epoch in the postwar world. But just the opposite has happened. Its waning strength diminished still

further, while the Communist forces in rebellion against it saw their fortunes rise to unprecedented heights. Their armies thus were enabled to capture more and more of Nationalist territory. In consequence American influence receded. And the State Department's recent White Paper practically announced the end of a diplomatic era in China. American policy, long confused, now appeared to be in total collapse.

In these days we have witnessed a very strange and somewhat dramatic shift in American foreign policies, West and East. In the West we have faced squarely about, discarding our historic tradition of "no entangling alliances," and have entered boldly into the North Atlantic Alliance. In China, on the other hand, where we made no pretense of aloofness but entered in with vigor, we have watched circumstances build up against us and we have practically withdrawn. Is the Open Door Policy dead or is it only in abeyance? Are we forsaking a position which we held with considerable tenacity for half a century? If so, are we doing it voluntarily or under compulsion?

We are told that our leaders in Washington this fall are restudying the complex situation in the Far East with the purpose of charting America's future course. From this distance, and without full knowledge of the facts, we can only peer ahead and try to discern possibilities which lie before us.

In the first place, the Open Door Policy, referring not only to China but in an expanded form to all of Eastern Asia, might be reaffirmed as representing a minimum of America's vital interest in that part of the world. We need raw materials which come from those lands, and our industry could profit from free access to their markets, both actual and potential. Moreover, we have a vast cultural and philanthropic enterprise there. Thus for many reasons Americans would be extremely loath to see other hands close the Open Door. But it may be that America will have to stand alone in demanding that it be kept open.

We must remember that the Open Door Policy was never intended to block the natural internal development of China herself. In fact when the principles of that policy were incorporated in the

Nine-Power Treaty of 1922, it was expressly stated that China would be given an unembarrassed opportunity to work out her own form of government. We are pledged to that ideal—that is, if the treaty is still in force.

The Nine-Power Treaty, however, does not bear the signature of Russia. When it was negotiated Russia was in quarantine. Although she owned a large segment of the Pacific coast of Asia, when Far Eastern differences were being composed in 1922 she was not consulted. It is possible that having been snubbed at that time, she is quite willing and even eager now to settle an old score and to revamp Eastern Asia to suit her own fancies.

Still, it is not yet clear to what extent Russia is to be identified with the Chinese Communists and their program. It is maintained by some that the old imperialism of the Czars in the Far East has become the new imperialism of the Soviets and is far more overt and ambitious. They feel that the recent successes of the Chinese Communists are to be attributed in no small degree to Russian collaboration and assistance. Moreover, beyond the borders of China, Communistic activity even up to the level of open rebellion and revolution is under way all across Southeast Asia, including rich and strategic Indonesia. Indeed, some correspondents actually report all this activity as the Soviet effort to build its own version of a "Greater East Asia Co-Prosperity Sphere." At the worst, if all these areas should fall under the domination of Communists, experience in other parts of the world would indicate that the Iron Curtain will be drawn as tightly around all of Eastern Asia as it now is across Korea. To the degree that Russia can be identified with this far-flung advance of Communism in the Far East, she is seen to be bent upon creating a condition which America consistently has resisted. In that sense Russia might now be playing the same rôle which Japan was playing ten years ago, with similar prizes urging her on. And as before, America stands alone in that part of the world.

In the second place, we could bestir ourselves to create another coalition to guard the enlarged Open Door. Indeed, it may be already in the making. President Quirino of the Philippines re-

cently spoke before the Congress in Washington as a sort of unofficial proponent of a Pacific Union to be created as a bulwark against Communism in the Far East. Asiatic partners in such a Union might be the Philippines, southern (free) Korea, Japan (revived and perhaps rearmed by the United States), whatever of Chinese strength Chiang Kai-shek could still muster, and those native governments which have sprung up in various sections of Southeast Asia which are opposed to Communism. To provide nerve and fiber for such a coalition it would be necessary to add American power firmly planted and implemented in Japan and a formidable string of island bases stretching from the Aleutians to the Philippines.

These are genuine Pacific powers, and for them to plan and work together would not be unnatural. But in case such an association is formed, it would not be surprising to see remnants of European powers in the East—British, French, Dutch, and even the Portuguese at Macao—come forward clamoring for admission. They have their own axes to grind. To refuse them would be to rebuff friends, while to admit them would give real meaning to the Communists' renewed cry of imperialism which they would surely raise. For America to take part in attempts to rebuild European empires in the Orient will undercut our effectiveness all across Asia.

That such a union of Pacific powers would be able to stop the spread of Communism cannot be guaranteed. The Communists might even turn it to propaganda purposes by claiming it to be provocative. On the other hand, America's record in freeing the Philippine Islands and setting them up as an independent nation has impressed very deeply all the exploited peoples of Asia. Likewise our record of moderation in Japan, and our uprooting of entrenched privilege and planting of democracy there, will steal the Communists' thunder and strengthen the hands of our friends. It would seem, therefore, that a union of Pacific powers could have definite psychological value, and its bulk might weight the scales against war.

A third possibility is to wait and see. What is happening in China now is the latest phase of the Chinese Revolution, which has

been going on intermittently nearly all this century. It broke out in violence in 1911, overturned the old Manchu Dynasty, created the Chinese Republic, and soon elevated Yuan Shih-kai to the presidency. We recognized him and his setup as the legal government for all China. He was not long, however, in turning reactionary, and all gains that had been made for democracy were soon lost. His successors, the war-lords, dragged their sorry way across the ensuing decade. Meanwhile, Dr. Sun Yat-sen, the real father of the Revolution, in despair called in the Russians. The enthusiasm of Communism proved contagious in China, and the Revolution was in full swing again by 1926-27. A brilliant young soldier, Chiang Kai-shek, rose to leadership, broke with the Communists and drove them underground, moved on to rid Peking of the war-lords by 1928, and to seat his Nationalist Government in power in the new capital at Nanking. This is sometimes called the Second Revolution, but perhaps it is better to think of it as a second phase of the Revolution.

Promptly we extended our recognition to Chiang Kai-shek and his colleagues as the legitimate government of China. Just three years later, seeing how rapidly he was bringing order out of chaos, the Japanese began their invasions. With no respite from his enemies, the Communists within and the Japanese from without, he did well to hold his country together for twenty years. The incipient forces of corruption which he inherited from the days of the war-lords, and indeed from a hundred and fifty years of internal decay of the Manchus, coupled with disastrous economic reforms attempted in the summer of 1948, played into the hands of the Communists, who, aided and abetted by the Russians, fell upon Chiang and overwhelmed him. Thus the phase of the Revolution now opening moves still further to the left.

As observed above, we pledged ourselves in the Nine-Power Treaty of 1922 to allow China a free hand in working out her own form of government. If that is genuinely what is going on, it would seem that if and when a new government is formed, there might be some compulsion on us to accord it official recognition. But probably we shall be in no great haste to do so.

Fearing, however, that the worst may come and a Communist government be established in China, some are finding a measure of comfort in the old saying, "China always conquers her conquerors." In this particular situation, so it seems to me, that axiom is not apropos. The two principal historic cases wherein China did conquer her conquerors were the invasion of the Mongols in the thirteenth century and that of the Manchus in 1644. The conqueror in both instances recognized himself to be inferior to the Chinese culturally and politically. So he moved in, set up his capital in China, and avidly set about making himself in all respects Chinese.

No similar conditions prevail today. China is not, at least outwardly, being conquered by the Russians. The Russians certainly do not feel that Chinese ideology is superior to Communism. On the contrary, Mao Tze-tung, the Chinese Communist leader, has openly announced his allegiance to the Marxist philosophy. The Kremlin will not be moved to Peiping, nor will Stalin and his associates become Chinese!

Still, it must be said that China is deeply steeped in the Confucian tradition. From the great coastal cities to the most remote villages in the interior, the Chinese are a Confucian people. Also we do well to realize that there are many elements of value in Confucianism; they have stood China in good stead for some three thousand years. No matter how good the propagandists of Communism may be, they will not easily nor quickly displace that ancient ideology. The Chinese are by nature stubborn and slow to change. Moreover, it may afford us some satisfaction to know that Confucianism is more congenial with Democracy than it is with Communism.

Let us assume, however, that Communist power is to be spread all the way from Singapore to Siberia to the Baltic and the Balkans. Such a vast domain, with multiple divisive influences, and with only a few lines of communication and transportation in Asia to hold it intact, almost certainly would begin to disintegrate almost before being drawn fully together. History would substantiate such a belief. And the order of the day is the demise of empires not the creation of them.

On the economic side, China and her neighbors in Asia are ex-

tremely backward; yet in World War II they had enough contact with the outside world to become dissatisfied with their plight and to yearn for a greater abundance. Russia cannot possibly supply their needs for a long time to come. Human restlessness can become a mighty force.

It may be that time in some degree is on our side. At least many of our officials in Washington seem content to wait and see.

Whether, then, we continue to stand alone or join with others in creating a Pacific Union, we may be able to draw some comfort even in a gloomy situation from contemplating that nature and human nature, economics and the flow of history, in the long run, would seem to align themselves in considerable measure with us on the side of the Open Door.

EDITORIAL

One of the surest ways to disable a good idea is to give it to a committee to develop. The more representative the committee, the more exhaustive its exploration of the idea, the more inevitable is death, deterioration, or delay. Once committee action is determined on, there is no way of avoiding the full rigors of formal procedure, each step of which lengthens the distance to a final and happy disposal of the project. First the committee must be formed; then a system of protocol must be established; then a survey made, a consultation of experts, a determination of the findings, and the drafting of a report by a sub-committee. Then follows the presentation of the report to the whole committee, with debate on its articles *seriatim et literatim*. When the report has been passed by a majority of the group (with or without a statement by the dissenting minority), it must be returned to the body to which the committee owes its appointment. There, after extended debate, something like agreement may finally be obtained on something like the original idea. But the end is not yet. It is more than likely that the matter has been considered independently of ways and means necessary to activate it. It is fortunate if this does not demand its submission to a new committee, and thrice fortunate if in this final stage of the long deliberations it is not given its quietus.

This is all very businesslike without doubt, and it is a method completely identified with, if not prescribed by, the democratic code. When great matters are at issue in the state, tedious though the procedure may be, it may not be safe to short-circuit the process except in times of public emergency. Nevertheless, long-drawn-out committee action is by no means a guarantee of wisdom in deliberation or equity in legislation. The process has been employed astutely by those who have subordinated the public welfare to private ambition and private gain. Furthermore, in unsettled times such as these postwar years, the slowness, uncertainty, and turbulence of committee action tend to confuse the public mind. At a time when America is looked to by all the free world to set the pattern of dem-

ocratic action, the antics of congressional and legislative committees are not calculated to spread the gospel of democracy.

We should probably not be abandoning ourselves to a fuehrer or a politburo if on occasion we should adopt more forthright methods of decision on the highest levels of government. Unhappily the example has been powerful with policy-making bodies on all levels. The circumlocution office has a branch in every American institution. Policy-making boards, councils, conferences, federations, and associations control or decisively influence every private organization in the land.

It is not to be charged that this control or this influence is definitely baleful. Actually it has resulted not infrequently in establishing and maintaining standards, unifying action, and discovering needs on the one hand, and on the other in discouraging wasteful competition and curbing eccentric individualism. The total result has undoubtedly been a concert of more effective social service.

But this result has only been obtained at a high cost which may easily become excessive, a cost in time, energy, and money. There have been far too many surveys made where the end-results could have been set down in advance of the formal investigation. Too many conferences have assembled to pass undisputed generalizations from mouth to mouth to be summed up in timid and futile resolutions. Boards of policy and committees on ways and means too often act independently or at cross purposes. Conferences and surveys have frequently eaten up sums of money which would have achieved substantial parts of the projects under consideration.

The waste of time is sometimes frightful to contemplate.

> "To expostulate
> What majesty should be, what duty is,
> Why day is day, night night, and time is time,
> Were nothing but to waste night, day, and time."

Not to pause over the appalling multiplication of reports, typed, mimeographed, and printed, too often the prolonged debate, much of it devoted to consideration of all imaginable deterrents to action, results in the relaxation of the very will to action.

"And thus the native hue of resolution
Is sicklied o'er with the pale cast of thought,
And enterprises of great pith and moment
With this regard their currents turn awry,
And lose the name of action."

One need not be in rebellion against the principle of debate and decision in committee, or against the observed procedure and its results in any special committee, fervently to wish that as much thought and labor were devoted to clearing the ways to desiderated action as so often with mistaken zeal is employed in strewing hurdles in the path of progress.

T. H. E.

A Note on the Frontispiece

The portrait of Mrs. Lettie Pate Evans, the donor of the Conkey Pate Whitehead Surgical Pavilion of the Emory University Hospital and only woman member of the Board of Trustees of Emory University, was painted this year by William Steene. It occupies a panel in the east end of the Memorial Room, within a narrow carved and pierced frame of light linden wood surmounted by a carved garland of spring flowers and fruits in the style of Grinling Gibbons, set against dark oak. The carving was executed by Herbert J. Millard from original designs by Phil Shutze, the architect of the Memorial Room. The subject wears a white satin gown. The upper figure is posed against a flat background in tones of taupe and reddish-brown, while lower in the picture there are accents of gold, burgundy, and emerald. This completes the group of four portraits of the Whitehead family to be installed in the Memorial Room, which was first opened at the dedication of the Surgical Pavilion on November 8, 1946.

The Direct Primary in Georgia

A Review by LESLIE W. DUNBAR

Leslie W. Dunbar, A.B. (Maryland) '41, M.A. (Cornell) '46, Ph.D. (Cornell) '48, is Assistant Professor of Political Science. Lynwood M. Holland, A.B. '32, A.M. '33, Ph.D. (Illinois) '45, is Associate Professor of Political Science.

One of the numerous differences between natural and social science is that in the former the material studied, as well as the method of study, is assumed, at least, to be orderly. Professor Holland's careful study of the Georgia primary,[1] lavishly documented and objective throughout, joins an ever-increasing body of monographs in political science which bring the torch of scholarship to illuminate the ridiculous. From its origin in Crawford County, Pennsylvania, in 1842, the direct primary has spread, especially in the last half-century, to become the usual mode of nominating party candidates in the United States. It has particularly suited the one-party politics of the South, where without it there would be no opportunity for popular choice of officers.

The book gives a history of the use of the primary in Georgia, an account of Democratic party organization and procedure, and a description of the workings of the primary illustrated by reference to a number of the more interesting elections. Inevitably, the county-unit system becomes the pivot about which the study develops. Fulton County, in July 1874, first introduced the primary to Georgia; a period of widespread local adoption followed, and the first state-wide primary was held in June 1898; the Neill Primary Law of 1917 wrote into law and made mandatory the county-unit plan of nominating, which since 1876, excepting the primary of 1908, had existed under party rules. Holland's study shows how the county-unit system is both derived from and accentuates the urban-rural division within the state. He writes:

> All efforts to eliminate the system have failed because the various factional leaders have used it as a political issue to arouse the distrust of the rural counties against the more populous ones. Demogoguery of the worst kind is bred and cultivated . . . , which will continue until urban Georgians gain the confidence of the rural counties and convince them of the undemocratic procedure of such a system. . . . A change . . . will come slowly in Georgia. Cooperation based upon a sympathetic understanding of the history and problems of the rural counties is a necessary prerequisite.

No portion of the book is more instructive than the description of Democratic party organization. In this maze of conventions and committees, the ordinary citizen, especially that aspiring fellow who wants to "do something" about politics, is indeed likely to get lost or be smothered: state convention, 159 county committees, state executive committee, the "primary subcommittee," ten congressional district committees, fifty-four state senatorial committees, municipal executive committees—each with its due allotment of

[1] *The Direct Primary in Georgia.* By L. M. Holland. *Illinois Studies in the Social Sciences,* Vol. XXX, No. 4. Urbana, The University of Illinois Press, 1949. 125 pp. $3.00.

officials, and more than its due of powers. Here is the massive apparatus of party government, the machinery of compromise and "deals," the fortress of the professional politician and the barrier to the amateur who knows as little how to breach it as he would know how to manage it if the chance were his.

The Negro question and the "white primary" are treated as they must be, and to the old, familiar story Holland adds sane words of caution to those who would circumvent federal court decisions—a maneuver, as he says, that can at most be temporary; besides, attempted exclusion of Negroes from the primary

> defeats one of the fundamental principles of a democratic government—the opportunity of everyone to participate and assume his responsibility in the nominating machinery of the state . . . not only the Negro, but also the poor white of the mountainous section, the ignorant white tenant farmer of the cotton belt, and the underprivileged worker of the pine lands.

This book is a valuable treatment of what is and is likely to remain an American instrument in the search for self-government. It is worth noting that it comes from one of the men doing yeoman's work to build up that intelligent understanding of the whole problem of politics which must precede intelligent popular control of the primary, and of the entire electoral process.

The Age of Constantine the Great

Jacob Burckhardt (1818-1897), the Swiss historian of art and culture, is best known for his masterpiece, *The Civilization of the Renaissance in Italy*. The greater part of his complete works have never been translated into English. The publication of *The Age of Constantine the Great,* translated by Moses Hadas,[1] makes generally available for the first time a work which the contemporary reader will peruse with a lively recognition of the analogies which exist between periods of revolution as far apart as the fourth and the twentieth centuries.

It is true that since the first appearance of this essay in 1852 and its second edition in 1880, scholarship has revised some of Burckhardt's conclusions. For a detailed and systematic history of the period historians may give first place to Volume XII of the *Cambridge Ancient History*. Burckhardt's purpose, however, was to present neither a biography of the Emperor nor a chronicle of events. His aim was rather a panoramic survey of world history for the half-century from the beginning of the reign of Diocletian to the death of Constantine the Great in 337, noting the conditions accompanying the decline of the Roman Empire and the transition from a pagan to a Christian world. It is unlikely that any later work, even though correcting Burckhardt's errors of detail, will give the lay reader so vivid and meaningful a survey of this critical period. For "Burckhardt was indeed a pioneer in the humanist reaction against

[1] *The Age of Constantine the Great.* By Jacob Burckhardt. Translated by Moses Hadas. New York, Pantheon Books, 1949. 400 pp. $4.50.

the microscopic but unimaginative history of the 'scientific' historians, though his wide and deep erudition, aside from his imagination and taste, entitle him to a distinguished place even among the scientific historians."

Professor Hadas, of the Department of Greek and Latin, Columbia University, carries on a double program of scholarship: he has published a number of works of original research in the classical field, beginning with the monograph *Sextus Pompey* (Columbia University Press, 1930), and he has translated several works of history, literature, and Judaica, the earliest (1932) in his bibliography being *The Book of Delight,* by Joseph ben Meir Zabara, in the Columbia series, *Records of Civilization.* One of the most notable of the Goethe bicentennial volumes, Karl Viëtor's *Goethe the Poet* (Harvard University Press, 1949), was translated from the author's manuscript by Professor Hadas. A *History of Greek Literature* is now in press and should appear shortly.

Alexander Means's Diary for 1861

A Review by DANIEL C. ELKIN

Daniel C. Elkin, A.B. (Yale) '16, M.D. '20, is the Joseph Brown Whitehead Professor of Surgery in the School of Medicine. Ross H. McLean, A.B. (Cornell) '11, A.M. (Michigan) '20, Ph.D. (Michigan) '25, is Professor of History in the College.

What were the thoughts and actions of a man of prominence in Georgia in 1861? The diary of Alexander Means,[1] simply and without regard for the appraisal of posterity, tells the story of one man's life in the time which he realized full well to be the most momentous in the history of his country.

Emory University in 1943 began the publication of a series of historical manuscripts known as *Sources & Reprints,* thus bringing to the light of the public some rare materials which had long been hidden in its dark archives. Most have dealt with the history of the South, more particularly with Civil War and antebellum days. This is the fifteenth of the series and is well worthy of such presentation.

Alexander Means was closely linked to the history of Georgia and Emory. As a politician, he was a member of the State Secession Convention. In his day and since, he has been highly regarded as an eloquent preacher, scientist, and educator. Simultaneously he held the chair of chemistry at the Medical College of Georgia at Augusta and at the Atlanta Medical College. Previously he had taught science at Emory College at Oxford, of which he was one of the founders and later president. He is remembered chiefly because of his versatility and for his brilliant lectures and experiments in chemistry and electricity. So enthusiastic were the praises of his pupils that there naturally grew up about him an aura of genius, deserved no doubt but augmented and enhanced by time. He was probably not a backwoods Leonardo, nor could it rightly be said that he was only a jack-of-all-trades. To rear a family of nine (including in some instances the support of his sons-in-law) with the meagre

[1] *Diary for 1861, by Alexander Means.* Edited by Ross H. McLean. *Emory Sources & Reprints,* Series VI, No. 1. The Library, Emory University, 1949. 46 pp. $0.75.

salary of a teacher and preacher would seem enough for any man. Add to this his preëminent attainments in oratory, theology, science, and administration, and one must admit more than a spark of genius.

For the student of Civil War history, the diary of such a man written in 1861 is of considerable importance, particularly since it was apparently set down only for the diarist's eyes. It gives first-hand information concerning the innermost thoughts and actions of one who played a prominent part in the politics and life of his people in that memorable year. Although a slave owner and devoted to the Southern cause of states' rights, he saw secession come with many misgivings, in fact, first voted against it "that we might be set right upon the record for the inspection of posterity." However, he and some of his colleagues, finding themselves in a minority, voted for secession in order "to show no signs of serious internal feuds or distractions, which the coercionists of the North might seek to turn to their advantage, but *on the contrary* to present as solid a front as possible to our enemies."

The diary tells a story not only of the great conflict but of his everyday family life, his friends, his slaves, his farms, his debts and investments. One can find here the price of cotton, or shoes, or sugar, and the day-by-day evidences of inflation as war came nearer his home. Moreover, he set down with exactness the names of all those with whom he had business or with whom he spent the night and remarks about the health and treatment of his patients.

Those interested in the history of Atlanta and Georgia will find many names and places in this excellently annotated reprint. In it are numerous references to Toombs, Cobb, Crawford, Stephens, Glenn, Phinizy, Brown, Westmoreland, Colquitt, and innumerable others prominent in the history of the times.

The diary is well printed and attractively bound. The editing and annotation have been carefully and tirelessly executed by Dr. Ross H. McLean, Professor of History at Emory.

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ATLANTA

The University Center in Georgia

In October 1938 a step of far-reaching importance to higher education in Georgia was taken by six neighbor institutions: Emory University, the University of Georgia, the Georgia Institute of Technology, Agnes Scott College, Columbia Theological Seminary, and the Atlanta Art Association. These institutions agreed to establish the University Center in Georgia.

The purpose of the Center was to further the cause of higher education in the region by coöperative use of resources and facilities of member institutions and by coördination of program planning, designed to eliminate unnecessary duplication and overlapping in educational service. It was in no sense a merger of the six schools; each retained its identity and complete control over its own administration.

The program was based upon the belief that voluntary coöperation among separate and distinct institutions can result in a great university development. The experience of eleven years has vindicated that belief. Public-spirited individuals and organizations have made substantial contributions to advance the work of the participating schools, because of their confidence in the added strength given Southern education by the coöperative impact of these institutions working together. Their programs have been strengthened by coördinated planning. Research has been stimulated by grants to more than 150 scholars. Reciprocity in the use of twenty-three libraries has been instituted, and a union catalog of the holdings of these libraries has been set up. Outstanding lecturers have been brought to the campuses of the six institutions. Emory and Agnes Scott have interchanged students and faculty members.

The Center has already proved that higher education can take large strides despite limited resources, when the spirit of coöperation is present.

A statement prepared by
the Dean of Administration

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